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# USSR Report

ECONOMIC AFFAIRS



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## USSR REPORT ECONOMIC AFFAIRS

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## PLANNING AND PLAN IMPLEMENTATION

### UKRAINIAN GOSPLAN OFFICIAL PROJECTS 1985 PLAN GOALS

Kiev EKONOMIKA SOVETSKOY UKRAINY in Russian No 1, Jan 85 pp 8-17

/Article by V. Popov, first deputy chairman of the Ukrainian Gosplan: "Economy of the Ukrainian SSR During the Concluding Year of the 11th Five-Year Plan"

/Text The Land of the Soviets has entered the concluding year of the 11th Five-Year Plan--the year of an active preparation for the 27th CPSU Congress, the year of the 40th anniversary of the victory of the Soviet people in the Great Patriotic War.

The draft of the state plan for the economic and social development of the USSR for 1985 was examined at a regular meeting of the Politburo of the CPSU Central Committee in November 1984. K. U. Chernenko made a big speech at that meeting. He summed up the work on the fulfillment of the decisions of the 26th CPSU Congress done by the Communist Party and the Soviet people, clearly defined urgent tasks and pointed out the big potentials existing in national economic sectors and the specific ways of overcoming difficulties and shortcomings.

The Politburo of the CPSU Central Committee basically approved the draft of the state plan for the economic and social development of the USSR for 1985 and the second session of the USSR Supreme Soviet confirmed it unanimously.

The 10th session of the Ukrainian SSR Supreme Soviet confirmed the plan for the economic and social development of the Ukrainian SSR for 1985 approved by the Central Committee of the Communist Party of the Ukraine. The plan envisages the further all-around development of our republic's oblasts, intensification of production specialization, strengthening of economic relations among them and a better utilization of all available material and labor resources. As during previous years, much attention is paid to housing, municipal and social-cultural construction (especially in rural areas).

As a result of the implementation of the decisions of the 26th party congress and of subsequent plenums of the CPSU Central Committee and of the propositions and conclusions contained in speeches by K. U. Chernenko, general secretary of the Central Committee of the party and chairman of the Presidium of the USSR Supreme Soviet concerning key economic and social problems, in the

Ukrainian SSR in 1984 the further growth of its production and scientific and technical potentials and an increase in the efficiency of public production and in the people's well-being were ensured. The generalizing indicator of economic development--the national income--in the republic reached 93.7 billion rubles, increasing by 3.2 billion rubles (or by 3.5 percent) as compared with the preceding year and by 14.4 billion rubles (or by 18.2 percent, under the plan, 15.3 percent), from the beginning of the five-year plan.

The volume of industrial production in the Ukrainian SSR in 1984 increased by 3.9 percent (under the plan, 3.1 percent). At the same time, the output of consumer goods (group "B") rose by 4 percent and of means of production (group "A"), by 3.9 percent, which points to a steady implementation of the policy of an outstripping development of the production of consumer goods and a rise in the well-being of the Soviet people outlined by the Communist Party. Plans for petroleum and gas extraction, the production of electric power, basic types of ferrous metallurgical products, mineral fertilizers, automobile tires and many types of machine building products and the output of commercial timber, wood fiber and wood particle boards, paper, cardboard, cement, slate, wall materials, window glass and many consumer goods were fulfilled and overfulfilled.

The strengthening of the material and technical base of agriculture continued in the republic in 1984. A large volume of work on land reclamation was fulfilled. A total of 100,000 hectares of irrigated land and more than 130,000 hectares of drained land were put to use at the expense of state capital investments. Implementing the Food Program, workers in agriculture and in the entire agroindustrial complex in the Ukraine attained an increase in the production and purchases of grain, sunflower seeds, vegetables, potatoes, grapes and livestock products. Last year the gross output of agriculture reached 30 billion rubles, which exceeds the 1983 level by 1.5 percent.

The operation of railroad transport improved somewhat. Its freight turnover increased by 1.5 percent in 1984.

An extensive capital construction program was implemented. About 500 big industrial capacities and projects, including power units at Chernobyl, South Ukrainian, Rovno and Zaporozhye atomic electric power stations and at Kiev, Zuyevka and Simferopol thermal electric power stations, turbines at the Dnestr Hydroelectric Power Station, capacities for the extraction of iron and manganese ores, steel smelting and output of iron ore concentrate, the "Zapadno-Donbasskaya" /Western Donetsk Coal Basin/ mine, capacities for the production of chemical and technological equipment and agricultural machinery and many projects of the agroindustrial complex and the nonproductive sphere, were put into operation during 4 years of the 11th Five-Year Plan.

Important measures for the introduction of the achievements of science and technology into production were implemented during the past years of the 11th Five-Year Plan. During that period 3,200 models of new types of machinery, equipment, apparatus, instruments and automation facilities were developed, the production of about 4,000 new types of industrial products was mastered and their series output was begun and the application of robotics, microprocessors and low-waste, waste-free and resource saving technologies was expanded.

At the same time, as a result of the fulfillment of the "Trud" /labor/ Program, in the national economy more than 880,000 people (including 230,000 people in 1984) were transferred from manual to mechanized and automated labor.

Definite advances were also made in an increase in the efficiency of public production. As a result of labor productivity growth in the republic the entire increase in the national income was ensured and the labor of 3.3 million people was saved. The fulfillment of the task set by the party, that is, to ensure an above-plan increase of 1 percent in labor productivity and a reduction of 0.5 percent in production costs, played a big role in the further intensification of public production.

On the basis of a more efficient management of the economy in all links of the production process Ukraine's labor collectives ensured a significant saving of fuel-power and material resources. According to the established assignments and adopted socialist obligations 1.7 million tons of boiler and furnace fuel, 3.1 billion kWh of electric power, 5.6 million g-cal of thermal energy, 436,000 tons of rolled ferrous metal products, 353,000 tons of cement and 952,000 cubic meters of timber were saved (according to preliminary data) in the republic's national economy in 1984. The utilization of secondary raw materials and production waste expanded.

All this created a firm basis for the implementation in the Ukrainian SSR of the program for a rise in the standard of living of the Soviet people outlined by the Communist Party. In 1984 per-capita real income increased by 2.1 percent and, on the whole, from the beginning of the five-year plan, by 10.5 percent. Wages of workers, employees and kolkhoz members and payments and benefits from public consumption funds were raised.

Families, whose average combined income per family member does not exceed 60 rubles per month, single mothers and parents working in boarding schools were exempted from payment for keeping children in boarding schools on 1 January 1984 and for keeping children in children's preschool institutions, on 1 July. The payment for these services for families having four children and more was reduced to one-half. Furthermore, norms of expenditures on nutrition in children's preschool institutions were increased.

On 1 September of last year the wages of teachers of first grades in general educational schools of all types and of supervisors and pedagogical workers in boarding schools and children's and infants' homes were raised and new types of additional payments and wage increments (for class supervision, for heading study rooms and laboratories, for checking written tests and so forth) were introduced.

The housing conditions of 6 million people were improved in the republic during 4 years of the present five-year plan. Domestic services, the system of public education, culture and public health were further developed there. Measures for environmental protection and an efficient utilization of natural resources are being implemented.



At the same time, in the development of the Ukrainian SSR national economy there were difficulties connected with shortcomings in the development of its individual sectors. Despite some improvement the proportion of enterprises not fulfilling the plan for the sale of products (with due regard for concluded contracts and orders issued for execution) continues to remain high. Nonproductive expenditures and losses are reduced slowly. The quality of individual types of products (and especially of consumer goods) does not always correspond to the demands placed on them. Many enterprises have available considerable above-standard stocks of raw materials and uninstalled equipment. Owing to a number of objective and subjective reasons, during the past years of the 11th Five-Year Plan the republic failed to receive a large amount of agricultural produce, which, in turn, had a negative effect on the operation of food and light industry enterprises. Not all ministries, departments and oblast executive committees systematically implemented measures for an increase in the efficiency of capital construction, which led to the dispersal of funds over a significant number of facilities and to their untimely commissioning.

The results of work of our republic's national economy could have been higher if all its ministries, departments, enterprises, construction projects, kolkhozes, sovkhozes and organizations had carried out with greater persistence the most rapid transfer of public production to the path of intensification, properly organized the fight for saving material and technical resources, lowering production costs and increasing the productivity of public labor, strengthened discipline and organization in all links and improved the system of management and the entire economic mechanism. Ukrainian SSR ministries, departments and oblast executive committees must thoroughly analyze the results of work in 1984 and during 4 years of the five-year plan as a whole and take specific measures to eliminate existing shortcomings and "bottlenecks" and to correct the lag allowed at a number of sections of public production.

The development of the Ukrainian SSR economy in 1985 is envisaged on the basis of an increase in the efficiency of public production and its intensification. At the same time, the main indicator of its efficiency--public labor productivity--in the republic will increase by 3.7 percent, which will make it possible to obtain the entire planned increase in the national income and to save the labor of 710,000 people (during the 5-year period, 4.1 million with a plan of 3.4 million). The task of increasing labor productivity in industry by 3 percent, in construction, by 3.5 percent and in agriculture, by 8.4 percent was set.

The maximum possible saving of fuel, power, metal, timber and building and other materials is an important factor in the intensification of public production. Therefore, in the Ukrainian SSR in 1985 the utilization of raw materials, supplies, fuel, electric power and other subjects of labor per ruble of the gross national product will be 0.6 percent lower than in 1984 and 4.2 percent lower than in 1980 (on the whole, the five-year assignment for a decrease in the material intensiveness of public production will be overfulfilled). The volume of utilization of secondary raw materials is to be increased to 150 million tons (as compared to 143 million last year).

The plan also envisages the further improvement in the utilization of production capacities. On this basis in the republic about 200,000 tons of cast iron and 230,000 tons of steel are to be smelted additionally and 220,000 tons of finished rolled metal products, 130,000 tons of cement, 24 million standard slate tiles, 2.3 million pieces of knitted underwear, 1.3 million pair of footwear and other products are to be produced.

Measures to increase the efficiency of public production envisaged by the state plan for the economic and social development of the Ukraine for 1985 will make it possible to accelerate the development of material production sectors. The republic's national income will increase by 3.6 percent, or by 3.4 billion rubles (as compared to 3.5 percent and 3.2 billion rubles in 1984). At the same time, the volume of industrial output will increase here by 3.1 percent, production of consumer goods (group "B"), by 3.2 percent and production of means of production (group "A"), by 3.1 percent.

In this plan much attention is paid to the republic's fuel and power complex. It is to be developed in accordance with the Basic Directions in the Long-Term Energy Program. The production of electric power in the Ukrainian SSR will increase by 4.7 percent. Its entire growth is to be ensured through atomic electric power stations. On the whole, the efficiency of this sector's work will rise on the basis of an increase in the degree of utilization of highly efficient equipment and removal of obsolete and worn out units from operation. The volumes of coal, gas and petroleum (including gas condensate) extraction in the republic envisaged for 1985 are slightly lowered as compared with last year. In accordance with the planned volumes of electric power output and fuel extraction the production of initial fuel and power resources will be reduced and the growing need of the national economy for fuel will be met through an increase in its import into the republic.

According to the plan the implementation of measures to stabilize the operation of ferrous metallurgical enterprises continues in the Ukrainian SSR this year. The output of thermally processed railways will increase 1.9-fold, of rolled metal products with differentiated strength properties, 1.1-fold, of polymer coated pipes, 1.3-fold and of sheet steel with protective coatings, by 2.9 percent. The production of new rolled metal shapes will also expand.

An increase in the output of chemical and petrochemical products is also envisaged in 1985. The production of mineral fertilizers will reach 5.2 million tons (in terms of a 100-percent content of nutrients), that is, increase by 9 percent. The annual increase in the production of synthetic resins and plastics will comprise 8.7 percent, of chemical fibers and threads, 0.8 percent, of caustic soda, 4.7 percent, of soda ash, 3.4 percent and of automobile tires, 1.1 percent.

The production of machine building products in the republic is to be increased by 6.2 percent. The output of new generations of machinery and equipment will be accelerated and the reliability of manufactured facilities will rise. Provision is made for the further expansion of the output of advanced equipment for automated lines and complexes, which will make it possible to significantly raise the level of mechanization of industrial processes and to

ensure the further growth of labor productivity and the introduction of waste-free processing of agricultural products at enterprises participating in the fulfillment of the Food Program. The series output of highly productive equipment and machinery will increase. The production of robotized complexes will be mastered and the transition to the mastering of flexible automatic lines, modules, flexible production systems, jib-grinding machines of an especially high precision, automatic universal milling tools and other new equipment will be prepared.

The production of wood particle and wood fiber boards, furniture, pulp and cardboard will be increased in the Ukrainian SSR this year. On the whole, the volume of industrial production of the timber, woodworking and pulp and paper industry will increase by 2.5 percent (and during the five-year plan, by 22.3 percent with a plan of 19.7 percent). Work on a more efficient and overall utilization of raw wood resources will continue.

An increase in the volumes of production of cement, slate, wall materials and window glass is envisaged in the construction materials industry.

In the plan approved for 1985 much attention is paid to the output of consumer goods, whose production volumes are determined in accordance with the draft of the overall program for the development of the production of consumer goods and services, the Food Program, trade orders and assignments of the five-year plan. During the current year the production of consumer goods in the Ukrainian SSR is envisaged in the volume of 61.2 billion rubles (in retail prices), which exceeds the 1984 level by 3 percent. At the same time, provision has been made for an improvement in the quality and an expansion in the assortment of these goods.

In light industry the volume of production is to be increased by 1 percent with an expansion of the output of products in great demand (including fabrics of the cotton print group, knitted underwear made of mixed yarn, knitted outerwear for children, articles for youth, off-season clothing of a stylish trend and with symbols and inexpensive goods for middle-aged people). The production of goods for cultural-general and household purposes in the republic will increase by 2.8 percent. At the same time, principal attention is concentrated on an all-around preparation for the output of technically improved articles distinguished by the novelty of the functional purpose, reliability, efficiency and improved consumer and esthetic properties. The volume of output at light industry enterprises will increase by 3.9 percent. It is planned to renovate the assortment of many articles.

In accordance with the assignments of the Food Program the further intensification of national economic sectors in the Ukrainian SSR forming the agroindustrial complex is envisaged. This year 6.7 billion rubles of capital investments, or 1.9 percent more than in 1984, are allocated for its development. They are allocated for the strengthening of the material and technical base of the agroindustrial complex, chemicalization of agriculture, reclamation construction, strengthening of feed production, construction of potato, vegetable and fruit storage facilities, increase in the capacities of the food and meat and dairy industry and the social development of rural areas.



Ways of development of agriculture--the main link of the agroindustrial complex--were examined at the October (1984) Plenum of the CPSU Central Committee. As noted at the plenum, a large-scale expansion of land reclamation is a decisive factor in the further advance of agriculture. The Plenum of the Central Committee of the party approved the long-term program for reclamation and increase in the efficiency of utilization of reclaimed land for the 12th Five-Year Plan and the period until the year 2000. Proposals on the program for reclamation and increase in the efficiency of utilization of reclaimed land for the 12th Five-Year Plan and for the period until the year 2000 in the Ukrainian SSR were examined at the November (1984) Plenum of the Central Committee of the Communist Party of the Ukraine.

In 1985 from all sources of financing about 6 billion rubles of capital investments are to be allocated for the development of the republic's agriculture, including 795 million rubles, for land reclamation. This will make it possible to further strengthen the material and technical base of kolkhozes and sovkhozes, to introduce advanced technologies and to reclaim land. More basic agricultural equipment--tractors, motor vehicles and trailers--than last year is to be delivered to the Ukraine. A total of 108,900 hectares of irrigated land and 128,000 hectares of drained land are to be put to use in a year.

The volume of production of agricultural products--21.9 billion rubles--envisaged in the republic is to be obtained through a more efficient utilization of land (especially reclaimed land: sown areas on irrigated land will increase by 5.3 percent and on drained land, by 2.9 percent), fixed capital, fertilizers, feed and other resources, introduction of the achievements of scientific and technical progress into the practice of production and reduction of losses. At the same time, special attention is paid to the realization of measures to increase the stability of production of grain and other products by means of reclamation, improvement in crop rotations, expansion of clean fallow, introduction of new varieties and hybrids and intensive technologies of cultivation of agricultural crops and strengthening of the feed base of public animal husbandry.

The 1985 plan also sets complex tasks for Ukraine's livestock breeders. It is necessary to ensure a significant increase in the production and purchases of meat, milk and other livestock products and to improve their quality. The sector's further intensification is envisaged through an increase in the production of feed, its efficient expenditure, refinement in pedigree work, introduction of advanced production technologies and improvement in labor organization on farms. The productivity of cows in the public sector will rise (as compared to 1983) by almost 5 percent and the raising of beef cattle per head (as compared to 1984), by 11 percent. Indicators of herd productivity in hog and sheep breeding and other sectors will also improve. Measures to stimulate the development of animal husbandry on the private subsidiary farms of the republic's population are also envisaged, for which 5.14 million hoglings and 211 million head of young poultry will be sold to kolkhoz members and sovkhoz workers and employees. Provision has been made to help the population in the purchase of feed.

The food industry plays an important role in the realization of the Food Program. In the Ukrainian SSR in 1985 there will be an increase in the production of granulated sugar from sugar beets (of 10.4 percent), vegetable oil (of 8.7 percent), meat (of 3.3 percent), canned goods (of 5.3 percent) and other products. At the same time, in the plan special attention is paid to problems of an efficient utilization of raw material resources, that is, lowering losses of raw materials, ensuring their processing at the optimum time and most fully utilizing waste and secondary resources.

A significant place in the fulfillment of planned assignments in material production sectors is assigned to transport. On the basis of the envisaged level of production and the volume of capital construction in the republic the freight turnover of all its types is to be increased by 2.4 percent. The material and technical base of transport will be developed further.

Capital construction workers in the republic will also have to accomplish an important task during the current year, that is, to increase production capacities in all national economic sectors and to put projects of the nonproductive sphere into operation. From all sources of financing 23.4 billion rubles of capital investments, that is, 3 percent more than last year, are to be allocated for the development of the national economy in the Ukrainian SSR. At the same time, construction and installation work will total 12.5 billion rubles, increasing by 5.2 percent. As during previous years of the 11th Five-Year Plan, measures for the retooling and reconstruction of existing enterprises are carried out at outstripping (as compared to the assignments of the five-year plan) rates. The proportion of these expenditures in the total volume of state capital investments will rise to 35 percent (as compared to 31.7 percent according to the five-year plan).

Provision has also been made for measures to strengthen the social direction of the capital construction plan through the further expansion of housing construction in the republic (especially in rural areas), development of housing construction cooperatives, increase in the scale of individual housing construction with the population's funds and implementation of measures connected with the general educational school reform.

The assignment of the plan for the economic and social development of the Ukrainian SSR for 1985 is based on the utilization of the achievements of scientific and technical progress. A large volume of work on a rise in the technical level of production and a prompt realization of republic goal-oriented overall scientific and technical programs, including for the development of the fuel and power complex, improvement in the quality of metal, reduction in the weight of equipment and structures and improvement in the utilization of labor resources, are envisaged. Nontraditional techniques of coal extraction and processing, methods, equipment and instruments for the prevention of sudden coal, rock and gas outbursts and special installations for the normalization of temperature conditions in faces will be developed.

The "Metal" Program envisages an expansion of the utilization of metal saving technologies and an increase in the output of efficient products making it possible to save about 2 million tons of ferrous metal in the sphere of production and consumption during the five-year plan. The fulfillment of the

assignments of the "Materials Intensiveness" Program will ensure the saving of about 1 million tons of metal and 365,000 tons of cement envisaged for the five-year plan, including 150,000 and 120,000 tons in 1985 respectively. Scientific research on the "Agrokompleks" Program promoting the fulfillment of the Food Program is aimed at the breeding of highly productive, new varieties and hybrids of agricultural crops. Work on the establishment of tracts of land for cattle of milk specialization for the formation of its more productive types continues. The realization of measures for the "Labor" Program will make it possible to save the labor of more than 4 million people during the five-year plan. This year the output of 960 new types of products is also to be mastered and about 7,200 types of articles with the State Badge of Quality are to be produced.

An expansion of the application of the brigade form of labor organization and stimulation is an important potential for the growth of labor productivity and reduction in production costs. In the republic this year it will involve about 50 percent of the workers in industry and 66 percent of the construction workers.

The realization of measures for an improvement in the economic mechanism continues. The economic experiment on extending the rights of production associations and enterprises in the planning of their economic activity and on increasing their responsibility for the end results of work will continue in the Ukrainian SSR Ministry of the Food Industry, heavy machine building and the electrical equipment industry. Production associations and enterprises of the Ministry of Power and Electrification, of the Ministry of the Chemical Industry, of the Ministry of Instrument Making, Automation Equipment and Control Systems, of the Ukrainian SSR Ministry of Local Industry (Vinnitsa and Zhitomir oblast administrations of local industry, the Kiev City Administration of Local Industry and the Ukrkhudozhprom Republic Industrial Association) and of the Ukrainian SSR Ministry of Consumer Services (Dnepropetrovsk, Crimean, Lvov and Poltava oblast administrations of consumer services and the Kiev City Administration of Consumer Services), as well as the Azovstal' Metallurgical Combine of the Ukrainian SSR Ministry of Ferrous Metallurgy, were transferred to work under experimental conditions on 1 January 1985.

On the basis of the growth of public production and its efficiency the implementation of measures to improve the well-being of the Soviet people outlined by the 26th CPSU Congress continues in the republic. In 1985 the per-capita real income in the Ukrainian SSR will increase by 3 percent and the average monthly wages of workers and employees, by 2.2 percent (and reach 174.4 rubles) and of kolkhoz members, by 3.1 percent (132 rubles respectively). Public consumption funds will increase by 4.4 percent and total 25.9 billion rubles. They will increase up to 510 rubles per capita (as compared to 490 rubles in 1984), or by 4.1 percent, and from the beginning of the five-year plan, by 22 percent. Capital allocated from these funds will be assigned for the support of very old and nonable-bodied members of society, protection of the population's health and organization of its rest, support and education of the growing generation, personnel training and cultural and general services for the public.



In 1985 it is planned to expand benefits to participants of the Great Patriotic War and to begin to increase minimal amounts of old-age pensions to kol-khoz members, as well as pensions to workers and employees, who have retired for a deserved rest more than 10 years ago.

The retail turnover of state and cooperative trade in the republic is estimated at 55.5 billion rubles, which will total 1,089 rubles per capita (as compared to 1,046 in 1984). The volume of sale of domestic services for the public will increase (by 5.8 percent) and reach 1.8 billion rubles, including 435 million rubles in rural areas. There will be an expansion of the services of rental centers and in the repair of furniture (of 14 percent), in the repair and construction of housing (of 12.2 percent), in the repair of radio and television equipment (of 13.6 percent), in the repair of refrigerators (of 9.4 percent) and so forth.

Capital investments in the volume of 3.9 billion rubles planned for this year (from all sources of financing) for housing construction will make it possible to commission dwelling houses of a total area of 18.3 million square meters. A total of 4.5 million square meters of housing, which exceeds the assignments of the five-year plan, will be commissioned in the rural areas of the Ukrainian SSR. A large volume of work on major repairs of available state housing will also be carried out. A total of 265 million rubles are allocated for this, which makes it possible to commission after repairs dwelling houses of a total area of 4.4 million square meters. A total of 1.5 million people will annually improve their housing conditions. By the end of 1985 the average provision of a resident in the republic with the total area of dwelling houses will amount to 15.11 square meters in cities (as compared to 14.93 square meters at the beginning of the year) and 18.5 square meters in rural areas (as compared to 18.14).

The republic's municipal facilities will be developed further this year. Water supply capacities for an additional delivery of 337,000 cubic meters of water in 24 hours will be commissioned, the construction of fluorated, chlorated and deironing units will continue and 10 cities and city-type settlements will be supplied with natural gas. A total of 730 km of gas networks are to be put into operation in municipal facilities. In rural areas 1,500 km of gas networks are to be commissioned, which exceeds 2.3-fold the assignments of the five-year plan. Tramway lines 23.6 km long and trolleybus lines 59.6 km long will be built and hotels for 1,884 places will be put into operation.

In accordance with the Basic Directions of the General Educational and Vocational School Reform improvement in the system of public education will continue in the Ukrainian SSR. From all sources of financing general educational schools for 140,000 students are to be built this year (which is 9,800 more than last year and 12,000 more than the calculations for the five-year plan). Rural areas account for 35 percent of the total number of commissioned schools. Schools for 730,000 students will be built in the republic throughout the 5-year period.

A total of 150,000 students will be admitted to preparatory classes in 1985, including 95,000 students in rural areas. The number of students in extended-day schools and groups will increase by 14,200, totaling almost 2.55 million

people, or 44.2 percent of the total number of students in first to eighth grades. All graduates of the eighth grade will continue their education at educational institutions providing secondary education. A total of 377,500 specialists will graduate from higher and secondary specialized educational institutions in the Ukrainian SSR and their total number employed in the national economy will reach 6.3 million people by the end of 1985 (as compared to 5.4 million at the beginning of the five-year plan).

From all sources of financing preschool institutions for 80,000 students are to be built in the republic, which will make it possible to increase the provision with them to 60.1 percent, including in cities, to 70.1 percent and in rural areas, to 39.1 percent. Preschool institutions for 395,100 students will be put into operation in the Ukrainian SSR throughout the five-year plan.

The realization of measures for the further development of cultural, physical culture and sports institutions and expansion of the network of sanatorium-health resort institutions, rest homes and bases, guest houses, tourist complexes and bases, motels and camping grounds continues.

By the end of 1985 the network of hospital institutions in the republic will expand to 668,560 beds (or by 7,500), including in rural regions, to 284,000 beds (or by 3,000). Their number per 10,000 people will increase from 130.3 beds last year to 131.2 beds during the current year. The number of physicians will annually increase by 5,100, totaling 210,800, and of medium-level medical workers, by 8,000, reaching 560,000, which will make it possible to increase their provision with services per 10,000 residents of the republic to 41.4 physicians and 109.9 medium-level medical workers.

The volume of work on environmental protection, including on removing industrial discharge and waste from water, air and land and on land recultivation, will also be expanded and the implementation of measures for the protection and reproduction of fish reserves and the protection and efficient utilization of mineral resources will continue. A total of 372.3 million rubles of state capital investments are to be allocated for nature protection measures in the Ukrainian SSR and throughout the 5-year period funds allocated for these purposes will total 1.8 billion rubles.

Ukrainian SSR ministries and departments, oblast executive committees and Kiev and Sevastopol city executive committees must intensify their work on the mobilization of all internal economic reserves for an unconditional fulfillment of the plans for 1985 and the five-year plan as a whole and concentrate the attention of labor collectives on a practical solution of problems of accelerating the transfer of the economy to a primarily intensive path of development. In all spheres of production and management it is important to improve the manner and methods of work, to strengthen planning discipline in the maximum possible way and to establish an atmosphere of organization, enterprise, a creative attitude toward work and great responsibility for the results of labor of every collective.

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## PLANNING AND PLAN IMPLEMENTATION

### ECONOMISTS ELABORATE ON 1985 PLAN TARGETS, PROBLEMS

#### Problem Areas

Moscow EKONOMICHESKAYA GAZETA in Russian No 1, Jan 85 pp 5-6

[Article by Yu. A. Belik, deputy chief, Economic Department, CPSU Central Committee]

[Text] Our country has entered the final year of the 11th Five-Year Plan. In his 15 November 1984 speech at a sitting of the Politburo of the CPSU Central Committee, Comrade K. U. Chernenko, general secretary of the CPSU Central Committee, presented a detailed analysis of the USSR national economy's performance last year and raised important problems regarding the country's economic development in 1985 and the immediate future. A session of the USSR Supreme Soviet passed USSR Law on the State Plan for Economic and Social Development and the USSR Law on the State Budget for 1985. As K. U. Chernenko emphasized at Politburo sitting, "the principal emphasis today is on the organization of a precise, purposeful effort to implement everything planned. The question is formulated as follows: the plan must be unconditionally fulfilled. Wherever possible and necessary, it must be overfulfilled.

#### Specific Features of the Plan for 1985

The plan for 1985 is entirely consistent with the policy of the 26th CPSU Congress and encourages the intensive development of the economy. It is aimed at consolidating and developing economic trends of the last 2 years. The general economic growth rates are planned to exceed the average rates for preceding years to a certain degree. This is made possible by the dynamism of the economy's development.

Under the plan, national income used for consumption and accumulation will increase by 3.5 percent compared with 3.1 percent in 1984. Industrial output is scheduled to grow 3.9 percent. This is higher than the plan for 1984 but is slightly lower than actual growth. Thus a reserve for overfulfilling the plan does exist. Agricultural output is slated to increase by 9 billion rubles or 6.7 percent compared with the past year.



The plan is oriented toward the intensification and increased effectiveness of production. The year 1985 stands out as the year with the lowest increase in work force size in the material production sphere compared with all the preceding years. Ninety-nine percent of the entire increase in national income, ninety-five percent of the increase in industrial output and the entire increase in production (shipping) in agriculture and rail transport will have to be the result of higher labor productivity. The relative saving of labor power throughout the national economy as a whole will have to be equivalent to the labor of 3.7 million persons. For every percent of increase in labor productivity, the average wage will be increased 0.49 percent in industry and 0.66 percent in construction.

The rate of lowering of the cost and material-intensiveness of industrial production is accelerating. Thus, the cost and material-intensiveness of industrial production will decline by 0.8 and 0.7 percent, respectively--an improvement over the corresponding indicators for 1984.

Everything that is being done to accelerate the development and increase the effectiveness of material production is ultimately intended to benefit the people [narod] and the working people [lyudi truda].

In 1985 a new, important step will be taken in the area of social development and of raising the Soviet people's living standard. Real per capita income will rise by 3.3 percent for the year (or by an average 2.2 percent for all preceding years of the five-year plan). Additional spending on social measures will amount to 2.5 billion rubles (compared with 1.6 billion in 1984)

The plan calls for pay increases for blue-collar, white-collar and kolkhoz workers and for the further development of housing construction, public health and other branches of the nonproductive sphere.

The scheduled increase as of 1 November 1985 in the pensions of blue- and white-collar workers who deservedly retired more than 10 years ago and who are receiving a pension of less than 60 rubles a month and the increase in the minimum old age pension for kolkhoz members are of exceptionally great importance. The corresponding outlays for the year will amount to two billion rubles.

#### Practice Economy in the Expenditure of Material Resources

In his speech to the Politburo of the CPSU Central Committee, Comrade K. U. Chernenko advanced five key problems on which the party and all working people must focus their attention. The demands common to all these problems are for better management, more effective resource utilization and more efficient work. In other words, the economy must be placed on a rational footing.

The saving of raw materials, fuel and supplies is uppermost among the key problems.

The national economy cannot continue to increase the volume of production of raw materials and supplies at an accelerated rate. Accordingly, the present task is to continuously reduce the material- and energy-intensiveness of

production. The saving of a certain increase in continuously growing resources, as was the case in the past, becomes a primary source for the growth of production. Accordingly, the plan for 1985 also stresses the conservation of material resources as the decisive condition to striking the necessary balance between the national economy's needs and resources for increasing the effectiveness of production.

The realization of the plan's economy targets is an indispensable condition to the fulfillment of the plan itself. This is how matters stand at present. Certain successes in this direction have already been achieved. Under the present five-year plan, national income has begun to grow at a relatively faster rate than capital investment. This is an indication that the national economy is now being managed more rationally than in the past.

The saving of fuel and energy during the first 3 years of the five-year plan comprised half of the increase in their production. The saving of fuel and energy resources in 1983 alone made it possible to reduce the consumption of reference fuel by 71 million tons compared with 1980.

In 3 years of the current five-year plan, the saving of raw materials, supplies, fuel, energy and other objects of labor amounted to 10.6 billion rubles.

The establishment of stricter norms governing the expenditure of ferrous metals in machine building and the introduction of a number of organizational and technical measures in construction made it possible to save 4.7 million tons of metal during the year.

But, of course, reserves for effecting economies are far from exhausted in industry and in other branches. This is attested to above all by the fact that material and fuel-energy resource conservation targets are not yet being fully met in all quarters. Progressive material- and energy-saving equipment and technologies are being introduced at a slow rate. The share of capital investment in technical retooling is insufficient. Production waste and secondary resources are not used to a sufficient degree. The norming and accounting of the expenditure of raw materials and supplies are lagging behind the higher demands.

A great saving can be realized by improving the utilization of secondary material resources. The recent CPSU Central Committee decree on this question rated the use of secondary material resources in the national economy as unsatisfactory. Secondary resources comprise a small part of the nation's overall material consumption. The basic rule is: combustibles are burned; incombustibles are buried or dumped. And yet millions of tons of valuable raw materials suitable for recycling are at stake. This economically detrimental to society and morally detrimental to the effort to educate people in the spirit of conservation. In addition to secondary resources, industry and the population also generate approximately 40 million tons of solid waste each year. It costs hundreds of millions of rubles merely to transport this waste which also contains many needed components.

The Central Committee examined the Vladimir Oblast party organization's effort to conserve material resources as one of the main directions of rational economic management. Enterprises in this oblast were the originators of the initiative to operate for 2 days in the coming year on the basis of economized supplies, raw materials and fuel. What are the economic implementations of this initiative? What will be the results of the 2 days of savings?

The saving of materials for a period of 2 workdays will give the national economy more than 3.5 million tons of coal, 7.6 billion kilowatt-hours of electric power, 570,000 tons of rolled metals, and 680,000 tons of cement. The realization of this target must be the basis of the socialist competition and the pledges and counterplans adopted by labor collectives for 1985. It is a matter of no small importance that savings in excess of the quota at every enterprise, in all oblasts, territories and republics will be used for social needs and especially to improve medical services to the population.

#### Use Labor Rationally

It is particularly important to realize this objective due to the present demographic situation which substantially limits the possibility of augmenting the nation's work force. Hence primary attention must be devoted to the more rational utilization of available labor resources.

Our labor potential is enormous. However there are many shortcomings in its utilization. Take, for example, the still considerable losses of working time. Not all is well with regard to labor discipline and the reduction of personnel turnover. It should be noted that the situation improved appreciably as a result of measures contained in decrees of the CPSU Central Committee, the USSR Council of Ministers and the AUCCTU on the strengthening of socialist labor discipline and the USSR Law on Labor Collectives. Thus, the reduction of losses of working time in industry and construction in 1983 alone was equal to their reduction in all 8 preceding years as a whole. Nonetheless these losses are still high. Therefore it is important to see to it that the movement to strengthen discipline would be a continuous, unrelenting factor in eliminating all manner of losses of working time due to absenteeism, idle time, administratively authorized leave, or other reasons.

Manual labor is still being mechanized at an extremely slow pace. The level of mechanization and automation of labor in industry has risen negligibly and is less than 50 percent. There is a need for a dramatic increase in the mechanization of manual labor.

The better utilization of labor resources already employed in social production is a significant reserve. In November 1984, the CPSU Central Committee examined and positively evaluated the effort of the collective at the Dnepropetrovsk Combine Plant imeni K. Ye. Voroshilov to use production capacities more effectively through the certification and rationalization of workplaces.

In Dnepropetrovsk and Dnepropetrovsk Oblast, workplaces are certificated at machine building, metallurgical, construction industry, petrochemical, light and food industry, public catering, and consumer service enterprises. In one

and one-half years of active work in Dnepropetrovsk and Dnepropetrovsk Oblast, approximately 3700 workers have been transferred to new sectors of production and to other enterprises.

The maximum utilization of internal reserves has been discovered to be an effective lever for resolving production, economic and social problems.

The certification of workplaces is instrumental in solving the following problems.

First, it helps to make workplaces more efficient (based on their preliminary certification) thereby making it possible to release workers who can then be employed in other sectors of production and ultimately to balance the number of workplaces with the number of workers at every enterprise and in every region.

Second, it permits the better, more complete utilization of equipment, the elimination of superfluous equipment, and the improvement of existing equipment. The result is a substantially higher return on capital.

Third, the workers themselves are direct, interested participants in the certification process.

Naturally, maximum efficiency can be realized only when all ministries and departments and not just individual enterprises and associations or individual branches address the problem of raising the organizational and technical level of the workplace.

The temporary, part-time, flexible-schedule, and seasonal employment of pensioners, housewives, students, and homeworkers can also be a substantial source of additional manpower.

The more rational utilization of labor in the nonproductive sphere, which presently employs one-fourth of the national economy's work force, is another important question. However, the increase in the volume of services and other work performed by the nonproductive sphere is to a considerable degree based on extensive factors and in particular on the hiring of additional personnel. Given the scarcity of labor resources, it is important to increase the effectiveness of the labor of this category in the work force through the increased mechanization of labor and the active diffusion of the best forms of labor organization.

#### Continuously Improve Product Quality

The attainment of the highest possible quality, reliability and service life of products in keeping with the principles of the 26th CPSU Congress is an extremely important task. In recent years, a certain amount of work has been done in this direction: product certification, the establishment of stricter standards, improvements in the quality control mechanism. Nonetheless, the quality of many products still leave much to be desired.



"Let us be candid," K. U. Chernenko stated at the sitting of the Politburo of the CPSU Central Committee. "Product quality in industry and in other branches is not yet at the highest level. The quality of certain types of metal products is a source of complaint. The reliability of certain machines and mechanisms is low. The chemical industry produces lackluster, unstable dyes. Nor is all well in construction."

The plan for 1985 lists important new quality improvement targets. But they are only the minimum that must be done. A major effort to improve the quality of all types of products lies ahead. There is a broad field of activity in various directions--technical, administrative and economic.

In view of the broad division of labor and cooperation in production, the quality of the final product depends directly on the quality of its component parts. High-grade leather, stable coloring agents, high-strength thread and glue, original accessories, comfortable lasts, and state-of-the-art production techniques are need to produce quality footwear. A flaw in any link in this chain will invariably affect the quality of the final product. Thus quality is a common concern. It is therefore important to instill in all workers a feeling of professional pride in their work, in their output. It is also necessary to generate intolerance toward slipshod workers.

#### Introduce Scientific Advances Widely

The introduction of scientific and technological advances in production has the most direct bearing on the resolution of the three key problems identified above.

Indeed, the saving of material resources will increase in proportion to the use of energy- and resource-conserving equipment and low-waste and wastefree technologies.

The effectiveness of the utilization of labor will increase in proportion to the productivity of the equipment and the mechanization of manual labor.

Technological progress also has a lasting influence on the improvement of product quality. Thus, the acceleration of technological progress in large measure determines the rate of our progress in improving product quality and in increasing the effectiveness of production.

In August 1983, the CPSU Central Committee and USSR Council of Ministers issued a special decree "On Measures to Accelerate Scientific and Technological Progress in the National Economy" which articulated a system of measures to ensure the earlier and more effective utilization of advances of science, technology and progressive know-how in production.

It called for raising the economic motivation and responsibility of enterprises and organizations for developing equipment and technology on a par with the rest of the world. Accordingly, the fulfillment of science and technology development plans and targets became one of the most important export indicators. A system of wholesale price markups and discounts was instituted to reflect the technical and economic level of the product.

Supplementary one-time bonuses for particularly important technological innovations were established. The state certification of industrial products in various quality categories was made more rigorous.

All this was in some measure instrumental in intensifying the science and technology development effort, particularly in such new, promising directions as atomic energy, robotics, microelectronics, and ASU [automated control systems].

The national economic plan for 1985 is more oriented toward the development and utilization of new types of machinery and equipment in production, toward increasing the scale of introduction of progressive technologies, and toward product renovation.

At the same time, there are still numerous shortcomings in the practical utilization of scientific and technological advances. Year after year, many ministries and departments fail to fulfill their new technology plans. The share of products in the highest quality category is rising slowly. Science and technology plans frequently make provision for only partial improvements. Progress is extremely slow in the development and introduction of fundamentally new types of products capable of raising labor productivity and the output-capital ratio and lowering the material-output and energy-output ratio substantially.

Taking all this into account, the Politburo of the Central Committee declared that questions pertaining to the acceleration of scientific and technological progress and the improvement of management in all phases of the economy must be examined at the next Plenum of the CPSU Central Committee. The plenum's decisions must bring about dramatic change in this vitally important direction of our development.

There is also the question of the closer integration of science with production. Practice shows that the merger of scientific research institutes and design bureaus with production raises the level of research and development and accelerates the practical utilization of its results. It is obviously advisable to critically appraise the network of branch science and technology organizations and where feasible to incorporate them in production associations. Science-production associations that encompass the entire cycle from research to production and exploitation must be given priority.

Scientific and technological progress will be accelerated by raising the prestige of the work of designers and technologists and by differentiating their pay to a greater degree depending on the quality of their work and the level of R&D work.

Encouraging results in this direction are provided by a Leningrad experiment that has been in progress for one and one-half years. The experiment stimulates the performance of a larger volume of technical-engineering work with a smaller work force. In the course of the experiment, the structure of design and technology organizations has been improved, the time required to perform the work has been reduced, the quality of R&D has been improved, superfluous links and artificially created positions have been eliminated, the



overall size of the work force has been reduced, and the saving on the wage fund has been used to encourage leading workers.

In the area of planning, it will be necessary to develop a mechanism that will anticipate the most important directions of future scientific and technological development so that the capital investment plan will be based on an economically substantiated plan of scientific and technological progress. This will ensure the integral unity of the national economic plan and the plan for scientific and technological progress.

#### Improve Management

The further improvement of performance indicators of branches of the national economy will in large measure be determined by the organization of management of the national economy, by the search for ways of improving the entire economic mechanism.

Of late, there have been a number of economic experiments aimed at developing forms and methods of management appropriate to the present stage of the economy's development. Management methods are being devised to accelerate the intensification of the economy, to improve the utilization of the existing production potential and above all to accelerate the introduction of new technology.

The search for new forms and methods of strengthening centralized principles in management in combination with the increased economic independence of the basic management link--production associations and enterprises--is of great importance here. All this is ultimately intended to activate local initiative, to increase the labor collectives' interest in and responsibility for rational, effective management and to strengthen the economic influence on enterprises' performance.

The effectiveness and organization of the economic mechanism entail the resolution of a number of organizational questions including the selection of forms of the basic link of the national economy and methods of interaction of enterprises and associations in the solution of common branch and interbranch problems, the precise delineation of functions of industrial associations and ministries, and improvements in the interaction between functional economic organs of management.

Starting with the new year, the 5 ministries participating in the experiment will be joined by another 21 union and republic ministries. Next on the agenda is the question of improving the activity of construction organizations, improving planning estimates, and increasing the material incentive of builders to put construction projects into operation on schedule. New methods are being developed to ensure the effective interaction of branches of the agroindustrial complex. In addition to this, many oblasts are also converting consumer service enterprises to the new conditions of operation.

The 19 March 1981 decree of the CPSU Central Committee, the Presidium of the USSR Supreme Soviet and USSR Council of Ministers "On Further Raising the Role

of Soviets of People's Deputies in Economic Construction" outlined a number of measures to increase the Soviets' influence on securing the integrated economic and social development of regions and on increasing the effectiveness of the effort of associations, enterprises and organizations belonging to the territorial economic complex to broaden the Soviets' coordinating and oversight functions.

The effort to bring order to the activity of the management apparatus is continuing. Norms are being developed to regulate the size of the management of USSR and union republic ministries and departments. Measures are being prepared to increase the responsibility of ministries and departments for reducing the number of personnel in the central apparatus of ministries, departments and union republics as well as the management apparatus at the middle level, including industrial and republic associations, main territorial construction administrations, and other middle-level management organizations.

The comprehensive improvement of planning, incentives and the organizational structure of management makes it possible to verify in practice everything that has proven useful and to incorporate it under the 12th Five-Year Plan in a system of management that corresponds to our society's higher needs.

The unconditional fulfillment of the plan of the final year of the five-year plan depends in large measure on the creative labor and initiative of every Soviet person, on the mobilization of the efforts of all labor collectives. And here as always, socialist competition is a powerful lever. All labor collectives are presently launching an all-people's competition for the fulfillment and overfulfillment of plans for 1985, for the successful culmination of the 11th Five-Year Plan.

Participants in the competition declare their resolve to greet the 27th congress of Lenin's party, the 40th anniversary of the Soviet people's victory in the Great Patriotic War and the 50th anniversary of the Stakhanovite movement with high production indicators.

#### Achievements, New Tasks

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3 May 1985

Moscow KRASNAYA ZVEZDA in Russian 16 Jan 85 p 2

[Article by G. Vlasenkov, candidate of economic sciences]

[Text] Our country is in an important stage of economic and social development--the concluding stage of the 11th Five-Year Plan. The new year of 1985--the year of the 40th anniversary of the Soviet people's victory in the Great Patriotic War and active preparation for the 27th CPSU Congress--will unquestionably make a worthy contribution to the further economic and social development of Soviet society and will be the base, the "launching pad" for economic construction in the forthcoming 12th Five-Year Plan.

What are the preliminary results of 4 years of the five-year plan and what are the tasks confronting us in 1985?

As we know, this was the subject of discussion at the 15 November 1984 sitting of the Politburo of the CPSU Central Committee and at the subsequent second session, eleventh convocation of the USSR Supreme Soviet. The Soviet people received the major policy speech by Comrade K. U. Chernenko at the sitting of the Politburo of the CPSU Central Committee with a feeling of great satisfaction. The speech offered a comprehensive analysis of the present stage of the Soviet economy and advanced important problems of economic and social development with particular reference to the acceleration of scientific and technological progress and the intensification and heightened effectiveness of production.

Notwithstanding the increasingly complex international situation and the intensification of the arms race (the direct responsibility for which is borne by aggressive imperialist circles and especially by the USA), the main result of four years of the five-year plan has been the stable, dynamic development of the national economy, the strengthening of the nation's economic and defensive potential, and the Soviet people's higher living standard and cultural level.

In accordance with the targets of the five-year plan, the country's national income increased in 4 years of the five-year plan.

The output volume of industry, the leading branch of the national economy, increased significantly. One of the most important tasks--the relatively more rapid development of branches engaged in the production of consumer goods--was realized at the same time.

As indicated in the decisions of the 26th CPSU Congress, branches of industry that have a decisive influence on increasing the effectiveness of social production--machine building, electric power production, the gas industry, the chemical industry, and a number of other branches--are developing at a more accelerated rate.

The country's production potential is steadily growing. Hundreds of large enterprises and associations have become operational. The Urengoy-Pomary-Uzhgorod export gas pipeline was put into operation in a very short period of time. Atomic energy projects were activated. The construction of the main railroad line was completed and trains were put into operation all throughout the BAM [Baikal-Amur Mainline]. The new transport artery is very important for the economic development of Eastern Siberia and the Far East.

Much has been done to implement the Food Program adopted at the May (1982) Plenum of the CPSU Central Committee. "A mere 2 years have passed, but it can be said with certainty that this has been a fruitful period," Comrade K. U. Chernenko emphasized in his speech at the October (1984) Plenum of the CPSU Central Committee. The highest agricultural output in the nation's entire history was attained in the third year of the current five-year plan. In 1984, a year with adverse weather conditions, it was approximately 134 billion rubles. Total agricultural output in 1983-84 was 20 billion rubles greater than in the first 2 years of the 11th Five-Year Plan.



The party's policy of steadily raising the Soviet people's standard of living is being consistently implemented. The wages of blue- and white-collar workers and incomes of agricultural workers are being raised in full accordance with the targets of the five-year plan. Social consumption funds have been increased.

The efficacy of the party's social reforms in the countryside should be noted in particular. In 4 years of the five-year plan, a combined total 132 million square meters of rural housing were put into operation thereby improving the housing conditions of more than 10 million persons. The scale of construction of rural schools, preschool institutions, health care, and cultural institutions has been significantly expanded. According to the USSR Central Statistical Administration, 85 out of every 100 rural families have television sets; 87 have radios; 73 have refrigerators; and roughly 60 have washing machines. Half of the rural families own a car or motorcycle. All this attests to unquestionable success in the realization of such an important objective of the [party] program as reducing distinctions in the living standard of the rural and urban population.

Thus, the development of the national economy in the principal directions is in keeping with the economic strategy developed by the 26th CPSU Congress and subsequent plenums of the CPSU Central Committee.

Of fundamental importance is the fact that we have succeeded in overcoming negative economic trends of the late seventies and early eighties when the growth rates of industrial production and labor productivity slackened. The efforts of the party and its Central Committee have been directed toward accelerating the development of the national economy, making up for lost time, meeting the targets of the 11th Five-Year Plan, and creating a reliable basis for the effective development of the economy in the future.

The party has carried out very important organizational and political work. It has also reached a number of large-scale decisions on economic construction and on improving planning. The effort to strengthen labor and state discipline has dramatically intensified and has yielded positive results. The growth rates of industrial production in 1981-82 averaged 3.1 percent a year, 4 percent in 1983 and 4.4 percent in 1984. The average increase in labor productivity in industry in the first 2 years of the five-year plan was 2.9 percent. In 1983, it rose by 3.5 percent and in 1984 by more than 4 percent.

Of course, not all difficulties and shortcomings have been overcome. Many enterprises and farms are still working below their potential. The target of introducing new equipment and technology in production is not everywhere being met. Shortcomings in the organization of construction are being eliminated at a slow rate.

Our people have already been working half a month to fulfill the plan for the final year of the five-year plan, which was compiled with the aim of reaching the level of five-year plan targets for the key items. It is primarily concerned with intensifying and raising the technical level of production, with securing the dynamic, proportional development of the economy, and with the maximum utilization of the country's production and scientific-

technological potential. The plan calls for higher growth rates in the basic general economic indicators compared with those attained in the first 4 years of the five-year plan. There will be absolute increases in national income, agricultural output, rail freight traffic, and in the production of a number of the most important types of agricultural products.

Intensive labor productivity growth targets have been established. Almost the entire increase in national income and 95 percent of the increase in industrial output are to be the result of higher labor productivity. This factor is to account for almost the entire increase in production in agriculture and rail transport. This is an indication that the nation's economy is approaching a qualitatively new point in its development.

There is increased emphasis on conservation. Industrial production costs in the new year must be reduced by 0.8 percent, which is higher than the indicator attained in 1984. Construction costs must be lowered by 0.5 percent. A popular initiative has developed at the initiative of the country's leading collectives--to work 2 days in the year using economized supplies, raw materials and fuel.

Industrial output is scheduled to 3.9 percent vis-a-vis the 1984 level; consumer goods production is slated to increase by 4 percent. Agricultural output is planned to increase by 6.7 percent.

The established rates of development facilitate a higher degree of proportionality and balance in the economy, which is one of the key factors of dynamic development of the national economy not only in the coming year but beyond the current five-year plan as well.

It is planned to produce 4200 new types of machines, equipment, instruments, and supplies or 7.7 percent more than called for in the plan for 1984. Twenty-five percent more progressive technological processes and means of mechanization and automation will be introduced than in 1984.

The work of all branches of the national economy and the acceleration of the development of the economy are aimed at raising the living standard of the working people further. Real per capita income must be raised by 3.3 percent. It is planned to build 114 million square meters of living space from all sources of financing--10.7 million more than specified in the five-year plan for this year. Benefits for participants in the Great Patriotic War will be expanded, minimum pensions will be raised for kolkhoz workers and pensions for blue- and white-collar workers who deservedly retired more than 10 years ago will also be increased.

The 11th Five-Year Plan will be followed by the 12th Five-Year Plan, the basic targets of which will be set by the forthcoming 27th Party Congress.

What is uppermost in the economic sphere in the forthcoming period and beyond? Comrade K. U. Chernenko's article "To the Level of Demands of Developed Socialism" in the journal KOMMUNIST emphasized that primary attention must be focused on qualitative change throughout the entire national economy, on setting the enormous creative power inherent in the very nature of developed

socialist economy into motion. "This power is such," the article stated, "that it permits, or more precisely, obligates us to set ourselves the fundamentally important task of raising the productivity of the country's social labor to the highest level in the world."

The party considers the immediate tasks of the Soviet economy from this standpoint. "The question today is such," Comrade K. U. Chernenko's article states, "that we must strive for a fundamental breakthrough in increasing the effectiveness of the national economy and in the intensification of all its branches even before the end of the eighties. The objective prerequisites for such a breakthrough are at hand. The problem is to decisively direct all our economic effort to this end."

It is a task of fundamental importance to re-equip all branches of the national economy and to incorporate the most progressive technologies in production in the shortest possible time. The next plenum of the CPSU Central Committee will examine the economic utilization of our country's enormous scientific and technological potential in production and its further development and growth.

The party today is advancing and resolving problems relating to the improvement of developed socialism in keeping with the people's basic interests. The Soviet people unanimously and warmly approve the party's domestic and foreign policy, implement its designs through their selfless labor, and tirelessly strengthen the economic and defensive might of the Soviet Union which is in the vanguard of social progress.

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INVESTMENT, PRICES, BUDGET AND FINANCE

FINANCE MINISTRY OFFICIAL DISCUSSES AUTOMATION PLANS

Moscow FINANSY SSSR in Russian No 12, Dec 84 pp 53-58

/Article by V. D. Pryakhin, director of the Main Computer Center of the USSR Ministry of Finance: "Development of the Automated System for Financial Calculations"

/Text/ The tasks facing the financial system at the present stage require an overall development of the scientific, information and technical base. The automated system for financial calculations developed for the purpose of increasing the efficiency of management of finances and improving the quality of planning and fulfilling the USSR State Budget is called upon to play an important role.

The automated system for financial calculations is developed as an organic part of the financial system and encompasses all links--from rayon financial departments to the USSR Ministry of Finance. The theory of socialist finances appears as its methodological basis and the existing practice of work of financial organs, as its starting base. The components of the automated system for financial calculations--economic and mathematical methods of modeling processes of formation, distribution and utilization of financial resources and methods of processing and displaying economic information oriented toward the use of modern computer hardware--represent efficient tools of improvement in the forms and methods of organization of financial work.

Two aspects closely connected in meaning, but, at the same time, different in content should be singled out in the directions of development of the automated system for financial calculations. First, during the construction of the automated system for financial calculations within the framework of existing rules and the plan for the preparation and fulfillment of the budget there is a constant improvement in calculations by means of their automation and development of the information base with the construction, in the end, of an integrated information processing system. The second aspect includes the elaboration and experimental check of improved, new methods of preparing and fulfilling the budget as applied to both calculations of its individual indicators and to the realization of certain functions of the financial system corresponding to the tasks of its development at every moment.

The automated system for financial calculations is developed mainly through the efforts of specialists at computer centers of the system of the USSR Ministry of Finance. At present computer centers have been established in 13 ministries of finance of the Union republics. The first stages of the automated system of financial calculations of a republic level have already been put into industrial operation in the RSFSR and the Ukrainian, Belorussian, Kazakh, Georgian, Lithuanian, Moldavian, Latvian and Estonian SSR. First stages will be put into operation in the Azerbaijan and Armenian SSR before the end of the five-year plan. In all, about 700 problems are solved in computer centers of Union and republic levels.

As a rule, these are problems of a consolidated group nature, which make it possible to automate the performance of routine operations concerning the formation of planning and analytic materials for the draft budget and reports on budget fulfillment, which do not change the methods and technology of financial work significantly. The contradiction in the processes of the system's development is reflected in their choice. On the one hand, the demand for the most rapid reception of an effect through the release of financial workers from labor intensive manual operations leads to the fact that most problems are now solved in a local mode. This gives a real economic effect within standard periods of recovery of capital investments.

On the other hand, there is a need for a system elaboration of the entire set of problems in their unity and interconnection, as well as for the development of programs, information support and hardware corresponding in their quality, capacity and reliability to the goals of construction of the automated system for financial calculations. At the same time, opinions are sometimes expressed to the effect that at first it is necessary to design the system as a single whole in a full volume, or at least according to its major elements, and then to introduce it into practice.

To be sure, the requirements for a system elaboration of problems should be realized at the earliest stages of construction of the automated system for financial calculations and form the basis for the strategy of its development. However, the big labor intensiveness of operations, limitations in the supply of resources and computer hardware and, mainly, the shortage of specialists simultaneously familiar with finance problems, economic and mathematical modeling and the data processing theory do not make it possible to develop the system in a full volume in a short time.

Furthermore, there are also limitations in the volumes of the system's introduction. They are due to the fact that the introduction of problems of the automated system for financial calculations to one extent or another changes the technology and organization of work on the preparation and fulfillment of the budget and methods, techniques and relations formed in work. The larger the scale of introduction of problems, the more significant these changes, the wider the range of specialists that they affect and the longer the time necessary for their adaptation, including for overcoming the psychological barrier, whose level at the initial stages of the system's introduction is quite high.

Owing to these circumstances, a strategy of stage-by-stage development based on an immediate conceptual study of the system as a whole and a gradual, within the framework of the general concept, development of an integrated data processing system, as well as of an economic-mathematical apparatus for the planning, fulfillment and analysis of the budget, has been adopted in the construction of the automated system for financial calculations. At the same time, individual elements of the automated system for financial calculations, as they are developed, are introduced into experimental and then industrial operation, gradually replacing the traditional elements of the technology of financial work. Simultaneously, the system's scientific, planning and technical base develops and both developers and workers of financial organs accumulate experience.

In this connection the development of a scientifically substantiated general concept of the system, which should contain a description of the ultimate goals of construction of the automated system for financial calculations and the ways of attaining them and give a clear idea of the methods and organization of work on the preparation and fulfillment of the budget under the conditions of the automated system for financial calculations, acquires the greatest importance.

During the development of the general concept it is, first of all, necessary to formulate the directions in the improvement in the methods and organization of preparation and fulfillment of the budget, toward the realization of which the development of methods and facilities of the automated system for financial calculations should be oriented.

Basic problems of improving finances in general form boil down to an increase in the role of financial planning in ensuring the balance of national economic plans, to an enhancement of the role of centralized financial resources as the scale of the social and economic programs implemented by the state increases and to an intensification of the effect of the financial mechanism on an increase in the efficiency of public production. These problems should be expanded into a system of specific directions in the improvement of financial and budgetary work and reflected in the problems of the automated system for financial calculations accordingly.

For example, let us examine, from the point of view of formation of the problems of the automated system for financial calculations, the problem of improving the system of financial plans, which requires the specification of the tasks and functions of each of them under the conditions of intensification of the role of the state budget as the key element of this system and the attainment of their organic unity on the basis of optimization of proportions between centralized and decentralized finances and among budgetary, internal and credit funds.

As is well known, financial plans are coordinated within the framework of the consolidated financial balance, in whose preparation the USSR Ministry of Finance takes a direct part. In the USSR State Planning Committee the consolidated financial balance is prepared for the national economy as a whole for an evaluation of the general plan balance on the basis of volumes of financial resources and directions of their utilization. However, for the

attainment of a full balance of the consolidated financial balance and specification of the frameworks and problems of plans of the financial and credit system it is necessary to analyze the complex processes of distribution and redistribution of financial resources, which are financed mainly by means of the USSR State Budget.

This problem can be solved under the conditions of the automated system for financial calculations by means of a special model apparatus, which makes it possible to ensure the modeling of the circulation of financial resources in the process of socialist expanded reproduction and a variant study of the processes of formation, distribution, redistribution and utilization of financial resources. For different stages in work on the plan and the budget the mentioned model apparatus should have a different structure from the point of view of detailing of indicators. At preliminary stages it should be based on consolidated models of material-financial or forecast-econometric types.

At the stage of development of the draft budget, when there are projections of financial plans of ministries and departments, budgets of the Union republics and other materials, the model apparatus of the automated system for financial calculations should ensure the formation of the consolidated financial balance on their basis. For the substantiation and analysis of the draft budget it is necessary to form a set of auxiliary balances in address and territorial terms, for example: balances of formation and utilization of the profit and of depreciation deductions and the structure of sources of financing of national economic sectors and large social and economic programs. This will contribute to a more substantiated determination of the frameworks and problems of all the plans of the financial and credit system and to their more harmonious coordination.

The demands for the model apparatus of the automated system for financial calculations for the solution of one of the problems of improving financial and budgetary planning should be reflected in the structure and organization of the system's information base, in the characteristics of hardware and so forth respectively.

Problems concerning the analysis of financial and economic activity can serve as another example of the importance of a preliminary study of directions in the improvement in the methods and organization of work on the preparation and fulfillment of the budget. For their solution problems of processing the accounting reporting of ministries and departments are provided in the functional structure of the automated system for financial calculations. However, the information contained in accounting reporting is insufficient for analytic work on uncovering all the resources of production and increasing its efficiency. For example, for an analysis of the profit according to factors in its formation it is also necessary to use other types of reporting, in particular on the efficiency of introduction of new equipment and technology and scientific organization of labor, improvement in management and so forth. Therefore, there is a need for an appropriate expansion of the information base and connections of interacting automated control systems, which should be envisaged in the planning materials of the automated system for financial calculations.



Principles of utilization of economic and mathematical methods and models must also be developed for the planning of individual budget indicators, as well as for an analysis of budget fulfillment. This is inevitably connected with the forecasting and analysis of various social and economic processes. Such an approach is characteristic for the planning of financial support for social and cultural measures. Of course, this should also be taken into consideration in the selection of methods of solving the corresponding problems of the automated system for financial calculations, in the formation of the structure of the information base and in the organization of the connections of the automated system for financial calculations with other systems.

From the point of view of the effect of problems of improvement in finances on the problems and functions of the automated system for financial calculations I would also like to dwell on the following matter. The elaboration of measures for intensifying the effect of the financial mechanism on the development of production and increase in its efficiency is one of the main tasks of the financial system. For the purpose of selecting the most effective system of financial levers and incentives economic experiments are conducted and on the basis of their results decisions are made on the advisability of specific proposed measures.

In the development of the system of financial levers and incentives methods and facilities of the automated system for financial calculations should play the role of tools in the selection of the most substantiated decisions, primarily through the possibilities provided, for example, by methods of mathematical statistics during a quantitative evaluation of the degree of effect of the proposed measures in their combination and interconnection on the results of production and economic activity of enterprises participating in experiments.

Problems realizing these functions of the USSR Ministry of Finance at present are not included in the structure of the automated system for financial calculations and are not considered during the system's development. In our opinion, this is inadmissible. The functional structure of the automated system for financial calculations should be developed further and the indicated problems should be made an independent subsystem. Problems of optimization of the proportion of profit distribution, of the structure of sources of capital investment financing and of the increase in standards of internal circulating capital and others connected with the formation of the financial and credit mechanism should also be considered in its structure.

The examples cited above by no means exhaust the entire range of problems of improving the methods and organization of work on the preparation and fulfillment of the budget. Basic Statutes on the Preparation and Fulfillment of the Budget Under the Conditions of the Automated System for Financial Calculations --the nucleus of the system's general concept--should be based on their full presentation and systematization. In our opinion, Basic Statutes should be developed in the structure of the following sections: schematic diagram of the functioning of the automated system for financial calculations; description of the basic problems solved at each stage and in every link of the financial

system with the determination of the corresponding problems of improvement in financial and budgetary work; substantiation of the selection of methods and models of solution of problems ensuring an improvement in the quality and substantiation of the adopted decisions; diagram of the integrated data processing system in the automated system for financial calculations.

First of all, it is necessary to clearly formulate the schematic diagram of the functioning of the automated system for financial calculations reflecting an interconnected sequence of consolidated procedures for the preparation and fulfillment of the budget with a description of their characteristics. The indicated diagram should encompass all phases and stages of budgetary work, that is, from a preliminary determination of general volumes of budget revenues and expenditures to an analysis of budget fulfillment at all the levels of the financial system. The development of the schematic diagram of the functioning of the automated system for financial calculations will make it possible to present in generalized form the organization of work on the preparation and fulfillment of the budget under the conditions of the automated system for financial calculations and on the basis of the functional characteristics of procedures to refine the structure and to substantiate the selection of methods of solving problems, which make it possible to realize the directions in an improvement of financial and budgetary work, to more fully determine their information base and interconnection and to map out the area of interaction of the automated system for financial calculations with the automated control systems of other ministries and departments.

The most urgent problems of development of the automated system for financial calculations, which must be studied primarily in the structure of Basic Statutes, include the development of information support. Information support for the automated system for financial calculations is realized by means of the development of an integrated data processing system, that is, a system for the collection, storage, search and display of information. The data bank of the automated system for financial calculations ensuring a collective use of the information base for the solution of the entire variety of problems is the central element of the integrated data processing system.

At present work on the development of the integrated data processing system is done in all directions. Systems of unified documentation, classification and coding, as well as facilities for a formalized description of data, are developed. The information computer center of the Lithuanian SSR Ministry of Finance was appointed as the head organization for the development of the data bank, whose first stage will be completed in 1987.

The development of the data bank is a complex, labor intensive and expensive process. The selection of software and hardware ensuring its functioning should be substantiated carefully. These substantiations are based on the determination of the composition and structure of the data bank of the automated system for financial calculations, interconnections of its elements and analysis of the information needs of data bank users generalized in a so-called preliminary infological model of the system. Essentially, the indicated model represents the diagram of the integrated data processing system, which determines in general form the totality of information used in the solution of problems of the automated system for financial calculations, its

internal and external connections, input channels, area of use and a number of other problems. Of course, such a diagram can be constructed in a substantiated manner only on the basis of the schematic diagram of the functioning of the automated system for financial calculations and the selection of methods of solving problems.

Therefore, the work now done at the information computer center of the Lithuanian SSR Ministry of Finance is directed mainly toward the development of methods of creating and operating the data bank and of requirements for the composition and characteristics of software and hardware ensuring its functioning. On the basis of this work and the integrated data processing diagram, standard software and hardware, as well as methods of introducing and operating data banks at Union and republic levels, will be determined subsequently.

Thus, in our opinion, now it is necessary to organize the development of Basic Statutes on the Preparation and Fulfillment of the Budget Under the Conditions of the Automated System for Financial Calculations. As noted above, it should begin with the study and generalization of directions in the improvement in financial and budgetary work. For this it is necessary to recruit the manpower of scientific research institutes specializing in problems of socialist finances.

These directions and ways of their realization should form the basis for planning work and determine its content. As yet developers of the automated system for financial calculations do not have such scientific studies. Therefore, the problems solved by them reflect basically existing methods and organization of work on the preparation and fulfillment of the budget, exerting an effect on an improvement in its quality much smaller than it ought to be.

It is impossible to overestimate the role of science in the solution of this problem. Now, however, the automated system for financial calculations is developed essentially without its support. In our opinion, this is connected with the fact that planning work on the elaboration of problems, as well as of programs, information and technological support and hardware ensuring their solutions, is singled out chiefly, without sufficient grounds for this. At the same time, however, we must not overlook the fact that the object of development of the automated system for financial calculations--increase in the efficiency of management of finances--can be attained only by means of a scientific study of directions in the improvement in financial and budgetary work. These problems cannot be solved with the extremely limited scientific manpower available to computer centers of the financial system and the recruitment of the necessary number of scientists for them is inadvisable and, in practice, impossible. Therefore, it is necessary to examine the problem of organization of work on the development of the scientific principles of the automated system for financial calculations at the base of the Scientific Research Financial Institute of the USSR Ministry of Finance, which performs research on problems of improvement in finances.

With due regard for what has been stated a conclusion on the need to complete the development of the general concept of the system can be drawn. It is advisable to formulate it in the form of a draft of the automated system for



financial calculations, whose first section should formulate the directions in the improvement in the methods and organization of financial and budgetary work and the central section, Basic Statutes on the Preparation and Fulfillment of the Budget Under the Conditions of the Automated System for Financial Calculations. The concepts of development of support facilities should be connected with Basic Statutes.

The process of development of conceptual principles of the automated system for financial calculations is quite complex and labor intensive. According to our evaluations, the development of the system's draft will take from 3 to 5 years. At the same time, it is necessary to accelerate the rates of current work on the planning and introduction of problems of the automated system for financial calculations, for which it is necessary to carefully study the directions in the development of the automated system for financial calculations during the 12th Five-Year Plan. In this connection the possible level of development of the automated system for financial calculations of the USSR Ministry of Finance and ministries of finance of the Union republics, as well as the directions and scale of development of the automated system for financial calculations at oblast and rayon levels by 1990, should be determined in advance.

The introduction of functional problems of the automated system for financial calculations concerning the management and processing on a computer of reporting on the fulfillment of the budget, refined plans for accounting of budget fulfillment and information for the formation of draft budgets of the Union republics and the USSR State Budget should be completed at Union and republic levels. They will completely replace traditional methods.

For the completion of the elaboration and introduction of the problems enumerated above during the 12th Year Plan, apparently, it is necessary to give up the block principle of organization of the planning of the automated system for financial calculations, in accordance with which the development of the functional part was distributed among information-computer centers of ministries of finance of the Union republics over the system's individual blocks so that subsequently information computer centers could exchange appropriate plans and form a plan of the automated system for financial calculations as a whole.

However, as practice has shown, the block principle of planning hampers to a certain extent the system study of problems, because many of their types, from the point of view of information needs and connections, are distributed over subsystems and blocks of the automated system for financial calculations with a certain share of conditionality. For example, the management of refined plans in the subsystem "expenditures of budget institutions" cannot be solved separately from the management of a refined budget list in the subsystem "consolidated budget calculations." Essentially, they represent a single set of problems, whose planning and solution should be centralized regardless of their belonging to a specific subsystem of the automated system for financial calculations. All this also applies to problems concerning the accounting of budget fulfillment and so forth.



The need for planning problems for large information-computer complexes realizing certain functions of financial work, not the structural elements of the automated system for financial calculations, was clearly disclosed during the development of standard formulations of problems. Recommendations on the joint development of an integrated complex of a group of problems concerning the accounting of budget fulfillment were adopted at a conference of developers in 1983. During the study difficulties arose not in the interblock coordination of problems, but in the establishment of a single information base for their overall solution, including the unification of documentation, classification of indicators, selection of the optimum structure of the data base and a number of others, whose solution in block planning would be hampered greatly.

Problems concerning the processing of reporting and analysis of budget fulfillment, as well as analysis of the financial and economic activity of ministries, should be mentioned as another integrated complex of this kind. At present problems concerning the processing of reporting on budget fulfillment have already been introduced in many computer centers of the financial system. At the same time, however, they sometimes represent simple summaries of report documents with extremely limited elements of analytic studies. In these cases the obtained effect is negligible, because a rise in the level of substantiation of decisions adopted during the preparation and fulfillment of the budget requires an analysis of the course of budget fulfillment or level of financial and economic activity of ministries, which would make it possible to reveal and quantitatively determine the effect of factors bringing about the course of fulfillment of the budget and the dynamics of its indicators and to uncover the potentials for an increase in revenue and a decrease in expenditures. Therefore, problems of processing of reporting and analysis should not be divided during their planning, because methods of analysis determine the requirements for the content of reports, as well as the composition of other materials necessary for analysis. When solving these problems, it is necessary to systematize and generalize methods of analytic work carried out by financial bodies, determine the directions in their improvement on the basis of utilization of the tools of the automated system for financial calculations and organize their planning in the form of appropriate sets of problems (according to objects of analysis).

Problems of consolidated budget calculations in combination with problems of formation in administrations of sectorial financing of financial plans of ministries and departments should be included in integrated complexes realizing the functions of formation of the draft budget and also subject to development and introduction during the 12th Five-Year Plan. The solution of problems concerning the development of financial plans of sectors in a full volume, that is, organization of the calculations of their indicators on the basis of appropriate methodological directives, is not implied in this case. Apparently, during the 12th Five-Year Plan it will not be possible to complete the development of methodological support for such calculations, because the necessary level of interaction of the automated system for financial calculations with other automated control systems will not yet be attained for this. It is a question of ensuring, when financial plans are formed on the basis of indicators calculated by traditional methods, their constant actualization in the process of work on the draft budget and integration.

The development of such a two-level complex will make it possible to significantly increase the operativeness of formation and to expand the range of consolidated and reference-analytic materials for drafts of sectorial financial plans and the budget and to ensure a constant, almost at any moment, control over the state of the budget balance. Of course, these problems should be planned jointly in one complex.

The introduction of the above-mentioned problems into all computer centers of Union and republic levels will make it possible to form during the 12th Five-Year Plan base elements of the integrated data processing system and to prepare a reserve for their unification into a single system, which will contribute to an improvement in the quality of financial and budgetary work. Taking into consideration the complexity and high labor intensiveness, it would be advisable to carry out the standard planning of these problems in a centralized way, determining three or four base (according to directions) information-computer centers for these purposes and reinforcing them with the necessary specialists accordingly. This work must be done with uniform programs and information and technological support, which are now being developed and are subject to mastering in the Main Computer Center of the USSR Ministry of Finance and information-computer centers of ministries of finance of the Union republics.

In their characteristics these support facilities correspond to the level of computer capacities, with which the system will be equipped during the 12th Five-Year Plan and, on the whole, will make it possible to realize the outlined problems. However, computer centers must be provided with remote data processing facilities, without which the introduction of integrated complexes, as well as many other problems solved in real time, is inadvisable.

During the 12th Five-Year Plan it is necessary to significantly increase the volume of work and to lend it a greater single-mindedness in the lower links of the financial system (oblast and rayon), in which basic information for the solution of accounting, control and analytic problems is formed. This applies both to the expansion of the network and to the organization of interaction of automated control systems of financial and credit organs: the automated system for management of financial calculations, the automated control system of the USSR State Bank, the sectorial automated control system of the USSR Bank for Financing Capital Investments, the automated control system of the Main Administration of State Insurance and the automated control system of the State Workers' Savings Bank, whose problems are most closely interwoven at these levels.

The question of expanding the network of computer centers of the financial system of oblast and rayon levels is the most complex, requiring careful substantiations of the economic advisability of expenditures on their development. There are different opinions on the principles of development of computer capacities at the examined levels--from the transfer of computer work to collective-use computer centers developed on the basis of the network of the USSR Central Statistical Administration to the development of minicomputer centers in every financial organ connected with a higher-level computer center. As yet there is no simple answer to this question, first of all, because a study of the composition of problems of the automated system for financial calculations solved at these levels and of connections with the problems of other automated control systems of financial and credit organs and their volume-time characteristics has not yet been completed.

In our opinion, the development of a network of collective-use computer centers of financial and credit organs would be most advisable. Arguments in favor of such a statement are based on a preliminary analysis of work done according to the program for the development of automated control systems of financial and credit organs. First of all, as already mentioned, at oblast and rayon levels problems solved by financial and credit organs are interconnected quite closely. This applies to their functions in the area of organization of work on budget fulfillment, monetary circulation, including settlements of accounts with the population, control-analytic work and some others.

The need to ensure a daily guaranteed level of computer capacities during the entire year is another argument in favor of the organization of collective-use computer centers of the financial and credit system. Problems of accounting the fulfillment of the budget in the automated system for financial calculations, calculation-accounting problems in automated control system of the State Bank and the Bank for Financing Capital Investments and similar problems of the systems of the Main Administration of State Insurance and the State Workers' Savings Bank can be solved effectively only in real time and require a constant availability of computer capacities during the work day. These problems will ensure the necessary level of computer loading, bearing in mind that during the remaining time computer capacities will be loaded with problems solved in a so-called package mode, for example, the processing of personal life insurance accounts in the inspectorates of the Main Administration of State Insurance and so forth. At the same time, the integration of problems of automated control systems of financial and credit organs is simplified within the framework of one computer center, which lowers the expenditures on the organization of their interaction.

At present problems concerning the organization of interaction of automated control systems of financial and credit organs are solved at all the system's levels under the aegis of the Scientific and Technical Commission of the USSR State Committee for Science and Technology. A high degree of work organization at a rayon level should be noted in the city of Tartu and Tartuskiy Rayon in Estonia. They are noted primarily for an overall nature of decisions, which from the very beginning envisage not so much the organization of interaction as an integrated information processing of all the parts of automated control systems of financial and credit organs. It is also important that work is performed with the scientific support of scientists at Tartu University.

The generalization and careful analysis of all the work done on the organization of interaction of automated control systems of financial and credit organs will make it possible to more fully substantiate the ways of the system's further development at all, especially oblast and rayon, levels. In our opinion, for a more profound scientific study of these problems it is advisable to organize work on the development of automated control systems of financial and credit organs, which for the present is carried out on a rayon level only in Estonia and on an oblast level, in the city of Gorkiy, in another two or three rayons and in the same number of oblasts of various Union republics having the necessary scientific and planning base.

In conclusion we must dwell on the problem of intensifying the methodological and organizational guidance of the system's development. The need for the solution of multifaceted problems of coordination of scientific research, planning, experimental and introduction work, as well as of the interaction of the automated system for financial calculations with automated control systems of other ministries and departments, requires a high level of rights and responsibility on the part of the manager of work on the system's development.

If we turn to the experience in the organization of work in systems, which are most developed at present, such as the automated control system for planning calculations of the USSR State Planning Committee, the automated system for state statistics of the USSR Central Statistical Administration, the automated control system of material and technical supply of the USSR State Committee for Material and Technical Supply and some others, the functions of the chief (responsible) work manager in them are entrusted to one of the deputy managers of a department, who, in accordance with the position held, has the necessary rights to solve problems of determination of the directions in the system's development and organization of its elaboration and introduction. In its scale, structure, tasks and complexity of problems the automated system for financial calculations does not differ fundamentally from the above-mentioned systems and, in our opinion, needs a chief work manager of an appropriate rank.

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INVESTMENT, PRICES, BUDGET AND FINANCE

BANK CONTROL INFLUENCE OF PRODUCT QUALITY DISCUSSED

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/Article by R. I. Kolpashnikova and G. V. Kulinina: "Analysis of Product Quality"/

/Text/ Basic Directions of the Economic and Social Development of the USSR for 1981-1985 and for the Period Until 1990 point out the need to improve the quality of all types of products and to expand and renew the assortment of articles according to present requirements for national economic development and scientific and technical progress, as well as the population's growing needs.

High-quality products ensure the saving of labor, material and financial resources, a fuller satisfaction of society's needs and an increase in export opportunities.

In this connection State Bank institutions have greatly activated their work on stimulating and controlling the fulfillment by enterprises of the assignments of the 11th Five-Year Plan concerning an increase in the output of products of the superior quality category or higher grades and a removal of obsolete products not meeting customers' demands from production. The arsenal of bank methods of assisting this positive process has been enriched considerably and has expanded during the years of the current five-year plan. In accordance with the directives of the State Bank Board the system of indicators applied during the realization of a differentiated approach to crediting has been improved, in particular through the use of indicators characterizing the fulfillment of plans for the production of products of the superior quality category by production associations (enterprises). The limits of crediting of expenditures connected with the planning, mastering and operation of new articles improved in their technical and economic level have been expanded.

At present crediting encompasses all the stages in the production of new or improved articles. The process of planning and design development of new articles corresponding in their technical and economic level to the best world models is carried out with the participation of bank credit granted to scientific research, planning-design and technological institutes. In the process of mastering the output of new articles credit is used for the formation of expenditures connected with the replanning of enterprises, readjustment of equipment and other purposes connected with the organizational and technological preparation of production. Enterprises implementing measures to improve the quality of products are given credit for the accumulation of above-standard production stocks, incomplete production and finished products.

Thus, bank credit has become an important component of the product quality control system.

The effectiveness of the work on stimulating the output of high-quality products and on this basis saving labor, material and financial resources carried out by State Bank institutions largely depends on the depth of analysis of the multifaceted activity of production associations and enterprises directed toward the development and introduction of product quality control systems. In connection with this we have made an attempt to illuminate the most frequently used methods of analyzing various product quality indicators.

The quality of products is one of the most important indicators of the economic activity of production associations and of all their structural subdivisions. The quality of products implies the totality of properties determining the suitability of products to meet certain needs in accordance with the function of these products (GOST /All-Union State Standard/ 15467-79).

An evaluation of the quality of products is made by means of a system of indicators. The product quality indicator is a quantitative description of the properties of a product forming part of its quality examined with reference to specific conditions of its development and use or consumption (GOST 15467-79).

According to the degree of generalization of the properties of a product indicators are divided into individual, giving a description of one of the properties of an article, and overall, describing several most important properties of an article.

They include indicators describing the reliability, durability, technological nature and esthetic and patent-law properties of an article, as well as reflecting the level of standardization and unification. At the same time, individual and overall indicators of the quality of products cannot give a consolidated evaluation of the quality of products. Therefore, generalizing indicators of quality reflecting the level of the quality of products regardless of their type and function have been introduced into the system.

If the quality of products in the broad sense of the word is discussed, indicators describing the proportion of the following should be included in generalizing indicators:

products, whose technical and economic indicators exceed or correspond to the highest achievements of Soviet or foreign science and technology (products of the superior category). The volume and proportion of products of the superior quality category in standard net or commodity products are planned in a running total from the beginning of the year;

products, whose technical and economic indicators meet the requirements of all-Union state standards and specifications (products of the first quality category);

obsolete products subject to removal from production;

products first mastered by production in the USSR;  
new products (produced for up to 3 years inclusive);  
products delivered for export;  
output of products according to grades (in sectors where grades are planned).

Since the quality of products is predetermined by the quality of the technological process, the following also pertain to indirect generalizing indicators:

production costs of finally rejected products;  
cost of expenditures on the recovery of rejects;  
losses due to rejects and claims.

Along with the enumerated indicators, other quality indicators obtained from organs of the State Committee for Standards and departmental and interdepartmental inspectorates for the quality of goods, as well as accounting documents of enterprises indicating a breach by suppliers of economic contracts in connection with the quality of delivered goods and so forth, are often used in the practice of bank control.

The above-mentioned materials of organs of the State Committee for Standards are used by State Bank institutions in the course of temporary credit services for enterprises and ruble control.

In their work on product quality control State Bank institutions widely use the information of state inspectorates on the quality of goods and trade established under ministries of trade of the Union republics, which on the basis of check results can reject products, or lower their grades and in some cases give instructions to enterprises to stop the shipment of poor-quality products. The copies of these orders are sent to State Bank institutions for subsequent control of accounting operations and use during crediting. State Bank institutions reduce the amount of credit against commodity stocks formed in connection with the suspension of shipment of poor-quality products.

Depending on the objectives and tasks of analysis the appropriate quality indicators are selected.

In particular, individual and overall quality indicators are used primarily for an analysis of the quality of products at the stages of planning, mastering and renovation of products for the purpose of selecting the optimum variant of output of products.

Furthermore, they are used during the evaluation and analysis of the technical level and quality of individual articles at the stage of series production for the purpose of uncovering the potentials for an improvement in the quality of specific types of products. Using technical level cards, which should be filled for all produced articles, economists jointly with engineering and

technical personnel compare specific individual indicators of the function, reliability, technological nature, esthetics, standardization, unification and so forth of a specific article with the corresponding indicators of a similar article produced at advanced enterprises or abroad. On the basis of the results of such an analysis performed most efficiently by methods of functional value analysis measures to improve the quality of serially produced articles are developed, or decisions on removing this article from production and replacing it with a more efficient one are made.

For an evaluation and analysis of the quality of all produced products generalizing value indicators of quality find the greatest application.

The following are the tasks of analysis:

analysis of plan fulfillment and of the dynamics of improvement in the quality and rise in the technical level of products;

analysis of fulfillment of the plan for the mastering of new types of products and evaluation of the renovation of products;

analysis of indicators of rejects and claims;

analysis of the effect of renovation of products and improvement in their quality on the basic indicators of enterprise activity.

Analysis begins from a check on plan fulfillment according to the basic directive indicator--proportion of products of the superior quality category in standard net or commodity products in a running total from the beginning of the five-year plan and from the beginning of the year. Information on the fulfillment of the plan for the quality of products is available in the form No 8 "Report of the Production Association (Combine) and Industrial Enterprise on the Fulfillment of the Product Plan," the form No 1-P of periodical reporting and the form No 3.5 "Quality of Products" of the association passport.

It is evident from table 1 that, on the whole, the plan was annually overfulfilled by 2.1 percent. However, within the year the degree of fulfillment of the plan for quality was different. In 9 months the plan for quality was not fulfilled, nor was it fulfilled during the first three quarters. Only a significant overfulfillment of the plan during the fourth quarter ensured the fulfillment of the annual plan.

Then an analysis is made of the dynamics of the quality of products according to the categories of superior, first and uncertified products. Statistical reporting in the form No 11-NT "Report on the Technical Level and Quality of Produced Industrial Products" is the source of the data for this analysis.

During the year under review, as compared with the preceding year, the share of products of the superior category has increased by 0.7 points. However, in the association the share of uncertified products is still considerable--it has risen as compared with the preceding year. It must be clarified when



the output of these products began. If more than 1 year has passed since the beginning of output, the reasons for the delay in certification must be clarified. Products not certified for more than 1 year without the authorization of a superior organization are automatically included in products subject to removal from production.

Table 1. Fulfillment of the Plan for Products of the Superior Quality Category

Quarter	Proportion of products of superior quality category in standard net products, %				Percent of fulfillment of plan for quality of products	
	in quarter		from begin. of year		quarterly	annual
	acc. to plan	in fact	acc. to plan	in fact		
A	1	2	3	4	5	6
I	73.1	72.8	73.1	72.8	99.6	99.6
II	71.3	71.0	71.6	71.6	99.6	100.0
III	73.9	73.1	73.7	73.4	99.0	99.6
IV	65.4	70.1	71.2	72.7	107.2	102.1
Total in year	71.2	72.7	--	--	102.1	--

A point evaluation is used during an analysis of the dynamics of quality. For example, in the machine tool building industry articles of the superior category are given 5 points, of the first category, 4 points and not certified on schedule, 0. On the basis of this the weighted mean indicator of quality is calculated. Either the quantity of products, or the value of the appropriate part of products, or the proportions of products of the appropriate category can be the weight.

In the association the average quality point during the preceding year was equal to:

$$\frac{5 \times 72.0 + 4 \times 15.0 + 0 \times 13.0}{100} = 4.20$$

similarly, during the year under review--4.24.

The average indicator of the quality of products in the association has risen. Using this indicator, it is possible, on the basis of comparisons with the data of other associations, to determine the place that the association occupies in the sector according to the quality of produced products.

For an evaluation of the attained level of efficiency and quality of association work, it is necessary to make a comparison of the rates of increase in all standard net (commodity) products, products intended for export and products of the superior quality category for a number of years. The excess of the rates of increase in export products (data on the output of products for

export are presented in the form No 8, section III) and products of the superior quality category over the rates of increase in all products can be considered the result of the rise in the final efficiency of production.

Table 2. Output of Products According to Quality Categories

Category	Percent of total output of products		Deviation of proportions of output of products during year under review from pre- ceding year
	preceding year	year under review	
A	1	2	3
Superior, according to plan	70.2	71.2	+1.0
In fact	72.0	72.7	+0.7
First	15.0	14.1	-0.9
Uncertified	13.0	13.2	+0.2
Total products	100.0	100.0	-

The certification of products according to quality categories carried out in associations is of great importance for an improvement in the quality of products. The certification of products according to superior and first categories is in effect for no longer than 3 years, after which the level of quality is checked again.

Assignments for an improvement in quality are planned in accordance with "Methodological Directives on the Procedure of Planning and Recording the Growth of Production of Industrial Products of the Superior Quality Category."

Financial incentives are provided for the fulfillment of assignments for an improvement in the quality of products. The amount of deductions into incentive funds is established depending on the attainment of the planned level of quality of products.

The decree No 695 dated 12 July 1979 of the CPSU Central Committee and the USSR Council of Ministers established an incentive wholesale price increment for new products for production and technical purposes. This increment is determined at the rate of 0.5 to 1.25 of the profitability standard adopted during the determination of prices for these or similar products. The increment is established for a period of up to 1 year and for especially complex products, up to 2 years.

When the State Badge of Quality is awarded to articles during this period, the effect of increments is prolonged without a change in their amount. The total period of effect of increments is established up to 4 years and for especially complex products, up to 5 years.

Higher wholesale prices are established for improved-quality consumer goods. When the Badge of Quality is awarded to new consumer goods, the temporary wholesale prices established for these goods are retained for the entire period of effect of the Badge of Quality. However, if the association produces

products not certified on schedule and subject to removal from production, wholesale price reductions at the rate of 50 percent of the amount of profit obtained from the sale of these products are applied to them.

Profit from the sale of products produced with a deviation from the approved standards, specifications and formulas is not taken into consideration during the determination of the results of economic activity of associations.

Reports of associations contain data making it possible to determine the effect of an improvement or deterioration in the quality of products on the basic indicators of activity. In particular, the degree of effect of a change in quality on the volume of sold commodity (standard net) products, profit, the profitability level and the amount of deductions into economic incentive funds is determined. At the same time, it should be kept in mind that plans for the mentioned indicators are established without taking into consideration wholesale price increments and the evaluation of plan fulfillment is made with due regard for the indicated increments. The effect of the amount of reductions in the wholesale price of lower-quality articles not in demand on the lowering of generalizing indicators of activity is evaluated in a similar way. For example, the plan for the output of standard net products annually totaled 120,000 rubles, the sales plan, 125,000 rubles and the profit plan, 40,000 rubles. During the year under review the amount of increments for the output of products of the superior quality category totaled 1,200 rubles. Therefore, the plan for standard net products was overfulfilled by  $1.2:120 \times 100 = 1$  percent, the sales plan, by  $1.2:125 \times 100 = 0.96$  percent and the profit plan, by  $1.2:40 \times 100 = 3$  percent as a result of an improvement in the quality of products.

Data on the amounts of obtained increments for the output of highly efficient products and products of the superior category with the Badge of Quality are presented in the form No 12 of annual reporting "Sales of Products" and the form No 2-KV "Supplement to the Balance" of quarterly bookkeeping reporting. Reductions in wholesale prices of articles in limited demand by consumers and proceeds from the sales of products produced with deviations from the established standards and specifications are reflected in these forms in the appropriate entries.

In machine building associations producing consumer goods products can be planned according to grades. The quarterly "Report on Grades of Industrial Products" according to the form No 1-P (grades) serves as a source of data for an analysis of grades.

An evaluation of the quality of products is based on the calculation of average grade coefficients and disclosure of the amount of losses due to lowered grades, because in planning wholesale prices of products of lower grades are established with a certain percent of reduction as compared with wholesale prices of grade I. The average grade coefficient is determined as the ratio of the value of all different-grade products to their value at the prices of the first grade according to the following standard working formula [see following page]:

$$K_c = \frac{\sum U_i q_i}{\sum U_1}$$

where  $K_c$  is the average grade coefficient;  
 $U_i$  is the price per unit of products of the  $i$  grade (1, 2, 3,... and so forth);  
 $q_i$  is the number of units of products of a given grade;  
 $U_1$  is the price per unit of products of the first grade.

At the analyzed association the output of consumer goods during the year under review totaled 1,250,000 rubles. On the basis of data in the form No 1-P (grades) we calculate the fulfillment of the plan for the grades of goods for cultural-general purposes and household use (table 3).

Table 3. Fulfillment of the Plan for Grades of Products

Grade	Price per unit, rubles	Acc. to plan			Acc. to report			Percent of plan fulfillment	
		units	proportion, %	thous. rubles	units	proportion, %	thous. rubles	acc. to quantity	acc. to value
A	1	2	3	4	5	6	7	8	9
I	200	5,000	80.6	1,000	5,500	84.7	1,100	110	100
II	150	1,200	19.4	180	1,000	15.3	150	83.3	83.3
Total		6,200	100	1,180	6,500	100	1,250	104.9	105.9

The average weighted wholesale price of an article according to the plan is 190.3 rubles (1,180:6,200) and according to the report, 192.4 rubles (1,250:6,500). At first we calculate the value of all products according to the plan and actually produced at the price of the first grade, multiplying this price by the appropriate number of articles. In our example the value of products at the price of the first grade according to the plan will amount to 1,240,000 rubles and according to the report, 1,300,000 rubles. The average grade coefficient according to the plan will be 0.9515 (1,180:1,240) and according to the report, 0.9617 (1,250:1,300). Therefore, the product grade coefficient is increased by 0.01 as compared with the plan.

The average grade coefficient can be calculated according to indicators of the volume of output in physical terms with the use of the grade norm characterizing the proportion of every grade of articles in percent of the total production volume. In this case for the calculation of the average grade coefficient the proportion of articles of every grade is multiplied by the coefficient of conversion of the price of this grade into the price of the superior grade and the results obtained are summed up.

We will calculate planned and actual grade coefficients on the basis of grade norms:



$$K_c = \frac{1.0 \times 80.6 + 0.75 \times 19.4}{100} = 0.9515$$

(according to the plan)

$$K_c = \frac{1.0 \times 84.7 + 0.75 \times 15.3}{100} = 0.9617$$

(according to the report).

A comparison of the actual coefficient with the planned one shows that the grade plan has been overfulfilled and the grade coefficient of produced products as compared with the plan has risen by 0.01.

An evaluation of the fulfillment of the grade plan according to indicators of the average weighted wholesale price of articles is made on the basis of a comparison of the actual average wholesale prices of a unit of article with the planned one. In our example the planned average weighted price of an article totaled 190.3 rubles and the actual one, 192.4 rubles, which means an increase in grades.

In order to calculate the amount of increase in the volume of output through an increase in grades, it is sufficient to multiply the difference between the actual average price of an article and the planned one by the actual number of produced articles. The same amount can be obtained by multiplying the difference between the actual and planned grade coefficient by the actual output in value terms.

An evaluation of the fulfillment of the plan for the mastering of new products, their renovation and removal of obsolete products from production is the next stage in the analysis. Data in statistical reporting in the form 5-NT "Report on the Fulfillment of the Plan for the Production of New Types of Industrial Products (First Industrial Series)," the form No 9-NT "Report on Removal of Obsolete Designs of Machinery, Equipment, Instruments and Articles From Production and Their Replacement With the Production of Improved, New Ones" and the form No 5-NT (renovation) "Information on the Renovation of Industrial Products" serve as sources of information.

According to data in the form No 9-NT it is checked whether all the types of machinery, equipment, instruments and articles planned for removal from production during the year under review have been replaced with new ones. The list and quality category of new or modernized machinery and equipment, which are placed in production instead of those removed from production, are established. The actual output of new machinery and equipment during the year under review is determined. If the production of new products has not begun, the reasons for the delay in production are disclosed and measures to eliminate the lag are outlined.

Data in the form No 5-NT of quarterly reporting, which for each type of new product presents planned and actual data on output per quarter and in a running total from the beginning of the year, are used for an evaluation of the fulfillment of the plan for the production of new types of industrial products. In case of nonfulfillment of the plan for the output of individual types of new products the reasons for nonfulfillment are indicated and measures to increase the production of new products are worked out.

The report according to the form No 5-NT (renovation), on the basis of which we will construct the following table 4, serves as a source of the data for analyzing the age structure of products in machine building.

Table 4. Age Composition of Products

No in or- der	Number of years from beginning of mastering of production of articles	Output of Products			Profitabil- ity in % of production cost (col. 1:col.3X100) -100
		in wholesale prices of an enterprise thous. rubles	pro- portion	acc. to actual production cost, thous. rubles	
A	B	1	2	3	4
1.	First	1,476	1.2	1483.4	-0.5
2.	Second	6,888	5.6	6150.0	12.0
3.	Third	24,600	20.0	21964.3	12.0
4.	Fourth	43,050	35.0	37112.1	16.0
5.	Fifth	15,990	13.0	11027.6	45.0
6.	Sixth	3,936	3.2	3546.0	11.0
7.	Seventh	1,845	1.5	1662.2	11.0
8.	Eighth	1,968	1.6	1600.0	23.0
9.	Ninth	2,214	1.8	1933.6	14.5
10.	Tenth	2,829	2.3	2477.2	14.2
11.	Over 10	18,204	14.8	17222.3	5.7
12.	Finished articles-- total	123,000	100.0	106178.7	15.8
13.	Value of other products	2,600	-	2097.2	24.0
14.	Commodity products	125,600	-	108275.9	16.0
15.	Newly mastered products (line 1)	1,476	2.2	1483.4	-0.5
16.	New products (no more than 3 years from be- ginning of produc- tion) (line 1+line 2+line 3)	32,964	26.8	29597.7	11.4

It is evident from the data presented that in the total volume of output newly mastered products comprise only 1.2 percent and products mastered in the last 3 years, 26.8 percent. If an enterprise retains such annual rates (about 9 percent) of renovation of products, it will be able to renovate its product list only in more than 10 years. Therefore, rates of renovation of products are obviously insufficient.

Products produced for 10 years and more comprised 17.1 percent in the total output. These are obsolete products intended for removal from production. The average age of products produced by the association determined as the sum of products of the year of production by the share of output of products in this group was 5.06 years ( $1 \times 0.012 + 2 \times 0.056 + 3 \times 0.2 + 4 \times 0.35 + 5 \times 0.13 + 6 \times 0.032 + 7 \times 0.015 + 8 \times 0.016 + 9 \times 0.018 + 10 \times 0.171$ ), which also points to low rates of renovation of products.

An analysis of the structure of products by age should be made not only as of a certain period, but also in dynamics. Such an analysis will show the intensity of renovation of products.

The data on the average profitability presented in reporting make it possible to disclose some reasons for the insufficiently high rates of renovation of products. In our example the production of newly mastered products is unprofitable (-0.5 percent) and the profitability of new products produced for no more than 3 years comprises 11.4 percent, which is 4.4 points (15.8-11.4) lower than the average profitability of all products. As investigations show, the mastering of new articles leads to an increase in costs mainly owing to the transfer of models with structural shortcomings into series production. Among other reasons there also can be omissions in production technology, an insufficient preparation of working personnel for the output of new products and so forth.

Rejects reflecting the quality of organization and fulfillment of the process of production of products are indirect indicators of the quality of products. Rejects are articles or parts not meeting in their properties the level of requirements envisaged in all-Union state standards and specifications and not suitable for use according to their direct purpose.

In their nature rejects are subdivided into recoverable and irrecoverable (final). Recoverable rejects, as a result of the elimination of defects, can be brought up to a level meeting the requirements placed on serviceable articles. Prior to this rejected articles are considered part of incomplete production. Rejects, which it is impossible or economically inadvisable to recover, are considered irrecoverable.

Rejects are also differentiated according to the place of detection and the reasons for their formation. According to the place of detection rejects are internal, that is, detected at an enterprise, and external, that is, detected by consumers. Such a subdivision of rejects makes it possible to correctly evaluate the work of the technical control department of an enterprise, as well as of appropriate structural subdivisions.

The existing system of information on rejects makes it possible to analyze rejects according to types and individual operations in physical terms, in labor terms (norm-hours) and according to the production costs of rejected parts and articles.

Physical measurers are applied where uniform products are produced. In the production of nonuniform products rejects are taken into consideration in labor terms and according to production costs. Information on rejects in physical terms is contained in statistical reporting on technical and production indicators and information on rejects in monetary terms, in a special section of reporting on production costs (the form No 1-S of the quarterly report and the form No 6 of the annual report). On the basis of these forms of reporting the production costs of finally rejected articles, expenditures on the recovery of rejects and losses due to rejects are analyzed. The total volume of production rejects is determined by the production costs of finally rejected articles and expenditures on their recovery. For the determination of losses

due to rejects the value of rejects at the price of the possible use and sums withheld from culprits of rejects and exacted from suppliers for the delivery of low-quality raw materials are deducted from the sum of expenditures.

We will examine the dynamics of rejects according to data in table 5 prepared on the basis of section V of the form No 6 of the annual report of a machine building association.

Table 5. Analysis of Dynamics and Losses Due to Rejects

Indicators	Preceding Year		Year Under Review			
	thous. rubles	in % of produc- tion costs of com- modity (gross) output	acc. to plan		acc. to report	
			thous. rubles	in % of produc- tion costs of com- modity (gross) output	thous. rubles	in % of produc- tion costs of com- modity (gross) output
A	1	2	3	4	5	6
1. Commodity (gross) products at production costs	108,320	100	108,306	100	108,216	100
2. Production costs of final rejects	8,665.6	8.0	X	X	9,414.8	8.7
3. Expenditures on recovery of rejects	108.3	0.1	X	X	216.4	0.2
4. Value of rejects at the price of use	5,849.3	5.4	X	X	5,410.8	5.0
5. Sums withheld from culprits of rejects	32.5	0.03	X	X	32.5	0.03
6. Sums exacted from suppliers	-	-	-	-	757.5	0.7
7. Losses due to rejects	2,892.1	2.67	2,815.9	2.6	3,430.4	3.17

As can be seen from the data cited, losses due to rejects have been planned for the association, because it has casting production in its structure. It should be kept in mind that at present losses due to rejects are planned in a limited number of production facilities, that is, primarily where at the present level of equipment and technology their appearance is inevitable (casting, glass and other production facilities). However, at the analyzed association the planned amount of losses has been exceeded both in monetary terms and in percent of the production costs of gross (commodity) products and, at the same time, indicators have also been lowered as compared with the preceding year. The total value of finally rejected articles and expenditures on the recovery of rejects has risen by 0.8 percent in relation to the production costs of gross (commodity) products.



On the basis of available data it is possible to calculate the effect of production rejects on the volume of output. Usually, in practice, this is done according to a simplified scheme. The absolute amount of rejects is calculated by adding the production costs of final rejects and the expenditures on their recovery, the proportion (or percent) of the obtained sum in the production costs of commodity (gross) products is found, then the volume of commodity (gross) products is multiplied by the obtained percent and the amount of underobtained products is determined in this way. With due regard for the above-stated in our example the amount of underobtained products will be:

$$\frac{108,216 \times 8.9}{100} = 9,631,200 \text{ rubles}$$

The calculation of the losses of output of products in connection with the availability of production rejects will be more accurate if during the determination of the percent of rejects in the denominator not the total production costs of commodity (gross) products, but only part of them, which are comparable with expenditures on finally rejected articles and with expenditures on the recovery of rejects, are taken. For the calculation of the proportion of the production costs of final rejects shop production costs can serve as comparable production costs and for expenditures on the recovery of rejects, the shop value of processing.

Shop production costs can be defined as the difference between the production costs of commodity products and the expenditures on general plant expenditures, losses due to rejects, expenditures on the mastering of production and other expenditures. The shop value of processing can be obtained by deducting material expenditures from shop production costs.

In connection with the fact that rejects are planned at the analyzed association, it will be advisable to calculate the volume of underobtained products as a result of above-plan losses due to rejects. For this it is necessary to multiply the total amount of products underobtained in connection with rejects, that is, 9,631,200 rubles, by the difference between the planned and actual level of losses due to rejects and to divide the obtained product by the actual level of losses due to rejects:

$$\frac{9,631.2 \times (2.6 - 3.17)}{3.17} = -1,731,800 \text{ rubles}$$

The association can increase the volume of products by this amount, eliminating the reasons for above-plan losses due to rejects.

The detected negative tendency in expenditures on production rejects makes it necessary to carefully analyze rejects in terms of individual production facilities and the reasons for and culprits of rejects. Within production facilities rejects are analyzed in terms of types of products and, if necessary, for individual units or production operations. Under the conditions of mechanization of accounting a current analysis of rejects is made on the basis of machinograms, which are issued by a computer center once in 5 days or daily.

On the basis of the data of such machinograms managers of the appropriate enterprise services take measures to reduce rejects. Information on the reasons for and culprits of rejects contained in daily machinograms can be accumulated in a computer memory and then be used for a description of the dynamics of losses due to rejects. On the basis of this information the association management is able to disclose the most widespread reasons for rejects and shops, production facilities, sections and work places giving the highest percent of rejects and to develop a plan for organizational and technical measures to lower rejects.

Claims are indirect indicators of quality reflecting the delivery of products with defects. Claims are officially lodged complaints by consumers against suppliers in connection with products delivered with defects. Each separate lack of correspondence of a product to requirements established by standard documents is called a defect. On the basis of the possibility of detection defects are divided into obvious and hidden and on the basis of the effect on the efficiency of utilization of products, into recoverable and irrecoverable. A defect, whose elimination is technically impossible or economically inadvisable, is called irrecoverable.

At the customers' request the supplier eliminates the defects, diverting additional financial, material and labor resources for these purposes. Furthermore, the supplier enterprise pays the customer a fine for the delivery of products of an inappropriate quality (this is stipulated by delivery contracts).

Data on products, against which claims have been made, are reflected in quarterly statistical reporting according to the form No 1-II (quality) "Report on the Quality of Industrial Products According to Claim Data."

This form of reporting is prepared in a running total from the beginning of the year on a quantitative basis in terms of individual types of articles and includes the following indicators: amount of actually produced products, number of claims adopted by an enterprise and amount of products, against which claims have been made, including those returned to an enterprise.

In the course of analysis the absolute amount of products, against which claims have been made, according to quantity and value is established, the proportion of products, against which claims have been made, in the total volume of sales is determined and measures for the elimination of causes of the submission of claims are developed.

The report also points out the reasons, owing to which claims have been accepted, and presents information on the course of examination by an enterprise of the received claims against all products, not only against those presented in the report.

An analysis of claims makes it possible to disclose hidden rejects, the violation of all-Union state standards and specifications during the marking of articles, the delivery of incomplete products and other violations.

For a prompt adoption of measures to reduce claims a current analysis of claims according to reasons and culprits should be made. The method of such an analysis is similar to that examined by us in connection with rejects.

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## INVESTMENT, PRICES, BUDGET AND FINANCE

### CHANGES IN LONG-TERM INVESTMENT FINANCING ADVOCATED

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[Article by N. Makarov, candidate of economic sciences: "Expanding Long-Term Crediting of Capital Investment"]

[Text] In recent years steps have been taken in our country to improve the planning and organization of capital construction and methods of financing capital investment. A great deal of attention is being devoted to the development of long-term credit. Whereas in 1965 the volume of long-term credit was 11.6 million rubles, on 1 January 1982 it was 27.7 billion rubles, and in the 12th Five-Year Plan long-term loans for more than 35 billion rubles are to be issued.

The established practices in granting credit have a positive effect on performance of assignments for putting fixed capital and production capacities into operation. The payback rate of capital investment, the times of repayment of advanced capital, and the quality of designs and their technical-economic substantiation are becoming especially important for participants in the investment process. With the credit form of advancing capital, purchasers, contracting organizations, and bank institutions are objectively put in conditions which demand thorough study of designs and other documents, and this produces good results. Thus, in just the 10th Five-Year Plan 82 percent of the buildings built with involvement of credit were put into operation on time or ahead of schedule. An analysis of experience with granting credit to 79 enterprises in the Ukrainian SSR shows that at half of them specific capital investment was lower than projected and the efficiency of the investment was greater.

Attracting credit resources enables enterprises and construction projects to significantly increase the volume of financing for special-purpose programs and thus accelerate construction of the most important objects. In the 10th Five-Year Plan the share of credit in planned resources for financing production projects for the USSR Srobybank as a whole reached 16 percent, while for the USSR Ministry of Petroleum and Petrochemical Industry and the USSR Ministry of Nonferrous Metallurgy the figure was 20-45 percent. More than 9,000 operating enterprises received credit for technical re-equipping and reconstruction in a total amount of 4.6 billion rubles. At these enterprises 10,600 different steps were carried out to improve production, and 8,269 of them were done on time or ahead of schedule. In 1981 alone, 435 measures were carried out which



increased the annual production of output by more than 500 million rubles, brought 31.5 million rubles of additional profit, and freed about 14,000 working people. Such an improvement in indicators can be explained by the fact that the credit method of advancing capital stimulates enterprises and organizations to look for and use additional internal reserves for construction needs and to exert influence on the design institutes, equipment suppliers, and construction organizations to speed up construction of projects.

But it would be a mistake to give credit functions which are not natural for it. Credit produces the anticipated effect only when closely combined with other measures, and without them its impact on production and economic relations is limited. Thus, if shortcomings in planning capital investment and material-technical supply for construction projects and contracting organizations and in providing full and complete planning and estimate documents for projects are not taken care of, the economic efficiency of credit will be incomplete.

Experience has demonstrated that credit measures alone are not enough to reduce construction time and lower the amount of incomplete construction. Capital investment and credit resources must be appropriated by years of construction with due regard for norms of length of building projects. Deviation from this rule leads to prolonging construction times, diverting credit resources for longer periods of time, and reducing the efficiency of the credit resources.

Shortcomings in providing planning and estimate documents continue to be a serious obstacle in development of the credit method of advancing investment in fixed capital under the state plan. The low quality of these documents often causes an increase in the estimated cost of construction. This leads to a corresponding increase in the payback rate on advanced capital and to a reduction in the planned efficiency of the capital investment. In such a case should the granting of credit be stopped? I believe it is advisable to continue, but the interest rate should be raised for every year of increase in the credit payback.

The fact that participants in the investment process are not properly accountable for compliance with contract conditions cannot help affecting realization of plans for capital investment in particular projects. Among the reasons for breakdowns in construction schedules are the contractor's failure to perform contract obligations, delay in resolving technical problems and review of planning-estimate documents by design institutes, and the failure of certain suppliers to deliver equipment. Therefore, the measures being taken today to raise the material accountability of enterprises and organizations for failure to fulfill assignments and obligations will exert influence in the direction of seeing that construction workers receive necessary materials and design documents on time. Long-term financing of capital investment cannot develop without broad dissemination of the organizational and economic measures being taken in industry to the construction industry, especially with respect to introduction of the two-element and three-element management system and more intensive stimulation for the quality indicators of construction work.

With the credit form of advancing capital for fixed capital, the shortcomings in construction noted above become especially important for the builder who

uses long-term credit. This is because the bank, when granting him credit on conditions of use for a term and repayment, thus establishes a certain responsibility for efficient expenditure of the loaned capital. Therefore, it is important to the purchaser that the planning institute, general contractor, and equipment supplier be equally responsible with him to the bank for the use of credit. As a result, all participants in the investment process have a significantly greater interest in more rational use of capital investment and contract relations and state discipline becomes stronger,

The responsibility of the latter for underfulfillment of the plan for construction and launching of production capacities is important for the development of cost accounting relations between purchasers and contracting organizations. The penalties charged to the contractor for this should be equal to the amount of interest for the credit calculated against the value of the capacities not put into operation at the time established in the contract. Establishing a uniform scale of penalties equal to the payment for credit for all participants in the investment process will increase the responsibility and material interests of the supplier, purchaser, contractor, and planning institution in compliance with plan discipline, conservation and efficient use of capital investment, reducing the volume of incomplete construction, and reducing construction times. The bank should be responsible for insuring timely sources of financing and credit.

Under the existing procedure an interest rate of one percent annually is charged for use of credit where projects are completed at the planned time; where the builder does not observe the established time for launching production capacities and fixed capital the rate is two percent of the amount of the loan issued to build these facilities, and when payments are overdue the rate is five percent. Are these rates economically justified? I do not think they are.

The low interest rate for credit is a kind of subsidy for its use given to enterprises by the state, and this does not fit the conditions of full cost accounting or the methods of socialist economic activity. Enterprises which receive through credit operating fixed capital that is at their disposal should pay an interest rate for it at least as high as the payment for fixed capital. At the same time both the interest for credit and the payment for fixed capital can be charged at a differentiated rate during the period of incorporation of production capacities, in conformity with the normative coefficient of incorporation, which means not in equal parts but rather considering the rate at which projected capacity is attained by years.

Raising the interest rate for using long-term credit will intensify the responsibility of the builder and contracting organization for insuring normative periods of construction and launching fixed capital. At the same time, such a proposal can be realized only gradually, as shortcomings in provision of materials, equipment, and people are eliminated, and the stability of long-term plans balanced with the resources and production capacities of contracting organizations is increased.

At the present time a maximum payback time for credit directed to new construction, reconstruction, and expansion of existing enterprises has been established. But it seems to us that it is unwise to limit the payback period for capital investment in new construction to a five-year term and to establish a firm rate of loan interest regardless of the term for which the state advances the credit resources. Continued use of such a payback period as the maximum for receiving long-term credit for new construction may cause certain ministries and departments, while still in the stage of compiling and ratifying technical-economic substantiation, to give enterprises capital investment payback periods of more than five years and plan state budget capital for their financing along with their own sources.

Considering that the normative coefficient of efficiency for the national economy as a whole in the 11th Five-Year Plan was established at a level of 0.14, the maximum payback time for capital investment in new construction should be increased to seven years, that is, considering average sectorial profitability and differentiating this time by particular sectors depending on their level of profitability. It appears that both low-profit and planned-loss enterprises can be switched to the credit form of advancing capital for fixed capital, which will promote selection of those reconstruction and expansion projects which will insure high profitability at such enterprises after completion of the particular work.

Carrying out these measures will broaden the framework of credit use in construction. It does make a difference to society whether capital is drawn from the savings fund for 2.5 years or 10 years. We know that a low level of profitability at enterprises and economically unsubstantiated variations of reconstruction cause an increase in the payback time of capital investment for fixed capital. But if we consider existing cases where the estimated cost of construction goes up because the price of equipment rises or because of mistakes by planning institutions made when compiling plan and estimate documents, the actual payback times are beyond comparison with the calculated ones which are the basis on which the bank opens credit.

Charging a higher rate of interest for credit with longer payback times for investment in reconstruction will stimulate enterprises to try to expand production by introducing new technological processes, increasing the share of the active part of fixed capital, and reducing the time of construction and installation work. When planning institutes are given design assignments, the enterprises will select the most economical reconstruction options, and when ratifying plan and estimate documentation will subject it to careful expert examination.

Because reconstruction generally insures higher efficiency of capital investment than new construction, in our opinion it is advisable to charge a higher rate of interest for credit when it is being repaid in a time equal to more than half of the corresponding payback time for new construction. However, preferential granting of credit, for example to produce consumer goods that are in great public demand, can promote a rapid increase in their production. At the same time, in addition to credit-type privileges such as issuing credit at lower interest rates and the like, it is important to consider the question



of broader privileges in building enterprises that manufacture such goods. For example, to involve contractors more broadly in building such facilities and to protect them against possible losses (because the volume of work does not always correspond to the production capacities of construction subunits), enterprises and contracting organizations should be given the right to establish by mutual agreement levels of planned savings and overhead expenditures in the estimates for construction with deviations of up to 30 percent from existing norms.

The statute on the procedure for planning, establishing, and using depreciation deductions in the national economy defines capital repair of buildings or structures as repair in which wornout construction elements and parts are replaced with more durable and economical units that improve the operating potential of the facilities being repaired; complete replacement of basic construction elements which have a very short service life at the particular site is an exception. This definition permits the very same work (for example, replacing the walls of buildings, replacing part of the underground utilities, replacing a wood ceiling with a reinforced concrete one, and so on) to be classified as either capital repair or reconstruction and causes confusion at enterprises when establishing sources of financing and using the capital.

Reconstruction of existing enterprises is not simple reproduction of fixed capital, but also as a rule restoring it on an improved technical basis and expanding production capacities and areas. Therefore, replacement of wornout construction elements and parts as well as equipment, when it does not increase the production capacities and areas of the enterprise, is classified as capital repair or modernization. A rise in the value of the facilities that are repaired is natural because there is an improvement in their operating qualities here.

It is advisable to make long-term credit for reconstruction dependent on the level of renewal of the active and passive parts of fixed capital. This will make it possible to limit credit in those cases where the passive part is more than half renewed and already during the compilation of initial data for planning will promote selection of options which envision broad replacement of the active part of fixed capital, because in reconstruction it can be fully replaced. Increasing the interest rate depending on increase in the payback time of capital investment will increase the influence of credit on reducing reconstruction times and on selection of the most efficient versions of it.

Under socialism expanded reproduction of fixed capital is carried on in the interests of the entire national economy with due regard for the need for fullest possible satisfaction of demand for output produced by the enterprise. The scale of production and plans for its expansion are delivered to enterprises by state planning bodies in a centralized manner. Therefore, the scale of expanded reproduction of fixed capital in certain periods may not correspond to the size of the accumulated depreciation fund and other internal resources that are directed to cover expenditures for fixed capital. In such a situation the enterprise has a natural need for additional loan capital for a more or less long time, that is, for long-term bank credit. And capital is advanced by the credit method on a planned basis subject to the conditions of repayment of the amount received to the bank at an established time with interest.



Under conditions of full cost accounting there are no objective, economically sound reasons for redistribution of the depreciation fund and savings, even within a single sector, for the amounts of deductions to enterprise economic stimulation funds depend on the quantitative and qualitative composition of fixed production capital and the condition of enterprise fixed capital is largely determined by the size of the depreciation fund and other savings. In addition, the procedure for outright confiscation of the depreciation fund and other capital disrupts the dependence of enterprise expenditures on their own resources and reduces the incentive to mobilize them and use them economically for construction needs. "Free" redistribution of the depreciation fund and other internal sources of financing capital investment outside the budget and credit systems leads to a decline in the efficiency of the latter and artificially retards the introduction of the creditform of advancing capital for fixed capital, which ultimately undermines the principles of full cost accounting.

Eliminating the factors that retard the development of long-term credit for centralized capital investment is dictated by the need for a further increase in the efficiency of socialist production.

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## REGIONAL DEVELOPMENT

### GOSPLAN EXPERTS DISCUSS SMALL, MID-SIZE CITY DEVELOPMENT

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[Article by V. Lyubovnyy, chief of the TsENII [RSFSR Gosplan Central Scientific Research Institute for Economics] and doctor of economic sciences; R. Bespechnaya, senior scientific worker and candidate of economic sciences; and E. Vaynberg, senior scientific worker and candidate of economic sciences: "The Economy of Small and Mid-Size Cities"]

[Text] At the present time and in the coming decades, the urgency of the questions involved in the improvement of the development of small and mid-size cities<sup>1</sup> both in the country as a whole and in the RSFSR in particular is determined by their place in the national economic complex and system of settling the republic and also by the peculiarities of their economic and social development.

At the beginning of 1984 in the RSFSR, there were more than 860 small and mid-size cities. Small and mid-size cities make up between 70 and 90 percent of the total number of cities in all economic regions of the RSFSR.

During the period 1959 through 1982, 140 new cities were newly organized (of these, 120 were organized on the basis of urban-type communities), and 89 small cities became mid-size cities. This structure of the formation of small and mid-size cities is evidence of the succession of the development problems of urban-type communities and small and mid-size cities.

Small and mid-size cities play a significant role in the economic and social development of the RSFSR.

More than 70 percent of the small and mid-size cities are rayon centers. Small and mid-size cities represent 35 percent of all rayon centers of the republic. About 18 million people, including more than 35 percent of the rural population of the RSFSR, live in administrative rayons headed by small and mid-size cities.

In accordance with the decisions of the 24th, 25th and 26th CPSU congresses, the republic has been carrying out the line of developing small and mid-size cities by locating small enterprises, branches and specialized shops of existing

<sup>1</sup>Small cities include those with a population of up to 50,000 people and mid-size cities have a population of 50,000 to 100,000 people.

associations, factories and plants there. During the last three five-year plans, more than 3,200 industrial enterprises and projects have been constructed or reconstructed in small and mid-size cities.

Industrial production in small and mid-size cities is predominantly represented by enterprises of the forestry, woodworking, light, food, fuel and building materials industries.

Of great importance in the formation of the economic base of more than half of small and mid-size cities are objects of an agroindustrial nature including agricultural enterprises, enterprises for the primary processing of agricultural raw materials, organizations and enterprises for the repair of agricultural equipment and the supplying of mineral fertilizers, procurement organizations, and also enterprises of the food industry serving the needs of the population of the cities and surrounding territories.

Small cities play an important role in the economic management and cultural and domestic services for the surrounding territories. Employees in administrative and service institutions in the cities-rayon centers constitute from 20 to 40 percent of the total number of employees.

One of the developing national economic functions of a small group of small and mid-size cities is science and science services. There are secondary specialized educational institutions in the overwhelming majority of mid-size cities and there are higher institutions in 30 of these cities.

In some small and mid-size cities, recreational objects play a role in city formation.

Table 1 characterizes the structure of small and mid-size cities according to basic functional types (in terms of the structure of the employed population at the end of the 1970's).

In recent years in small and mid-size cities, a significant volume of social welfare construction has been completed. In the years 1970 through 1980, the number of children in preschool institutions in the cities increased by 35 percent and the capacity of hospital institutions increased by 18 percent. There was a decline in the number of children being taught in second and third shifts.

At the same time, despite certain positive results, the development level of a significant portion of small and mid-size cities of the RSFSR still does not meet the requirements for the social and economic development of the country and republic.

Included among the main problems in the development of small and mid-size cities are the insufficient development of the engineering-technical and social welfare infrastructure, a limited number of workplaces, the relatively low technical level of enterprises, a disproportion in the utilization of the labor of men and women in a number of cities, a limited complement of sectors of physical production in the nonproductive area characterizing the economic base of the

cities of these categories, and shortcomings in the formation of the urban environment.

Table 1.

Functional Type of Cities	Relative Share of Cities of the Given Type in the Total Number of Cities in the RSFSR of the Indicated Categories, in Percent	
	Small Cities	Mid-Size Cities
Multifunctional centers	-	3.6
With a predominance of industrial and industrial-transport functions	50.7	69.4
Of these, narrowly specialized centers	13.0	11.7
With a predominance of functions in the organizational-economic and social-cultural servicing of the surrounding territories (local centers)	40.6	2.9
Developing as companion cities of very large cities	-	11.0
With a predominance of transport functions	3.5	2.9
New construction	1.4	4.4
With a predominance of recreational functions	1.3	0.7
Centers of science and science services and other functional types	2.5	5.1
Total	100.0	100.0

On the average among the cities under review, even under relatively high indicators for the coverage of the population with several services of social and cultural institutions, there is a regional differentiation in the level of development of the social conditions of the infrastructure both among individual groups of small and mid-size cities as well as among small, mid-size and large urban centers, which is not in the interests of the development of the eastern regions of the republic, the nonchernozem zone, and the formation of the APK.

The enumerated problems lead to an undesirable loss of population, particularly among the young people of the small cities, as a result of which the mid-size and especially the small cities are lagging behind the large cities in the rate of population growth.

In the years since 1959, one out of five small cities in the RSFSR lost population or failed to grow. With the background of the general decline in the rate of population growth of all categories of cities, there is an increasing number of small cities in which the population is declining. This is especially true in the European part of the RSFSR (above all in central Russia).



Whereas at the end of the 1950's and beginning of the 1960's an important goal in the development of small and mid-size cities was the provision of full employment for the able-bodied population, now the situation has undergone a fundamental change. According to the data of the 1979 population census, the average share of the able-bodied population of the small cities in the RSFSR not employed in public production amounts to only a few percent. There are now practically no free manpower resources in the small and mid-size cities of the RSFSR.

An analysis of the development of small and mid-size cities of the RSFSR made possible the revelation of the basic reasons for the indicated shortcomings, which in a rather conditional manner were divided into objective and subjective reasons.

The objective reasons include the following:

--changes in the structure of the national economy, which to a certain extent narrowed the economic base for the formation of small cities. These changes included a reduction in the amount of new construction and greater concentration of industrial production in very large and large cities in connection with an increase in the share of capital investments directed to the reconstruction and technical reequiptment of the enterprises located there;

--exhaustion of available manpower resources in small and mid-size cities;

--absence in a large group of cities of railroads and highways linking them with the republic's transportation network;

--inadequate capacities of local construction bases together with a weak development of their territorial systems;

--limited possibilities of the state in allocating essential financial and physical resources for nonproductive construction.

The following are seen as subjective reasons:

--inadequate work by oblast and city soviets of people's deputies in providing for a purposeful policy for the development of small and mid-size cities as well as in coordinating the efforts and resources of the ministries and departments whose enterprises are located in their territories to establish a developed social-welfare and production infrastructure;

--a narrow departmental approach by the All-Union ministries and departments to the evaluation of the efficiency of construction in small and mid-size cities under the absence of economic incentives contributing to the placement of production enterprises in small cities;

--the established system for the planning and financing of infrastructure projects primarily according to departmental channels, which deprives small cities (undergoing weak industrial development) of the opportunity to receive the necessary resources for the establishment of a service sector and for overall building.

To determine the goals and rational directions for the social and economic development of small and mid-size cities, it is important to bring out those peculiarities and tendencies that characterize the national economy and settlement in the current stage and in the long term and that exert a more significant impact on the processes taking place in small and mid-size cities.

One of the important peculiarities of the period is the establishment of a single national economic complex whose formation is being accompanied by the intensification and integration of the social division of labor.

One of the main directions in the formation of a unified national economic complex is that of qualitative changes in the established network of settlements through a more and more precise regulation of the functions of individual populated places.

Under the growing limitation of resources for the development of large-scale centers (ecological, territorial, water), small cities must increasingly take upon themselves functions to relieve them of unspecialized projects both of a production as well as of a nonproductive nature and they must be a place for locating production systems supplementing the national economic base of the large cities. At the same time, the small cities maintain their traditional functions as centers for the development of new resource regions and as centers for the primary processing of raw materials, etc.

In the long term, small and mid-size cities must play a more important role as links providing for the transition to a unified system of urban and rural settlement. The needs of the rural population for occasional and in part for periodic types of cultural and personal services can be met only through institutions located in small cities. A special role here belongs to small and mid-size cities that are rayon centers.

The contemporary period is distinguished by the increased importance of social factors. The overcoming of the disproportions and differences in the standard of living of the population and the leveling out of the possibilities for satisfying the standard needs of the inhabitants of various communities will contribute not only to the general realization of the main goal in the development of society but also to the implementation by each city of its role in the social division of labor. The importance of social factors is increasing in connection with the peculiarities of the developing demographic situation at the present time and in the long term.

The reduction of the growth rate of the population and the decline in the absolute indicators for its natural increase in the country and the republic, leading to an increase in the number of vacant workplaces in the large centers, can increase the flow of manpower out of small and mid-size cities if active measures are not taken for their population to increase the diversity in the choice of occupations and to improve the conditions of work, everyday life, recreation and the all-round development of the personality. In resolving these tasks, much importance is being attached to the problem of ensuring a balance in the development of small and mid-size cities, which determines the necessity of the coordinated development of all urban subsystems and the improvement of the structure of the urban economy, above all by means of the

development of the engineering equipment in the territory of these cities and the observance of certain proportions in the development of housing construction and all types of public and municipal services. The improvement of the urban environment in small and mid-size cities will not only help to solve the social problems in their development and consolidate the population there but, along with the development of a communications system linking these groups of cities with the republic's large cities and centers for the spread of urban culture, it will also contribute to raising the "quality" of manpower resources. The latter is especially important for the effective functioning in small and mid-size cities of production systems determining scientific-technical progress.

All of the aforesaid permits one to determine the following goals for the development of small and mid-size cities: higher level of social development and a strengthening of the role of small and mid-size cities in the social and organizational-economic development of rural rayons gravitating to them.

To reveal possible directions for the development of small and mid-size cities determined by a complex of local conditions for the development of each of them, the TsENII under the RSFSR Gosplan carried out a corresponding comparative evaluation of the totality of conditions for the development of the cities under review, some results of which are presented in Table 2 for the beginning of the 1980's.

Up until the present time, a very important and largely the only direction for the development of these categories of cities was seen to be industrial construction. Under today's conditions, however, this one-sided direction of development is being curbed, as was already pointed out, by the reduction in the volume of new construction, the inadequate level of development of the infrastructure, the absence and difficulty of attracting skilled manpower, and the small possible capacity of industrial objects under the lack of or weak development of communications linking these cities with larger centers.

It appears that, along with industrial development, rational directions for the development of small and mid-size cities can include more diverse types of activity, above all work connected with the accompanying territories such as the servicing of agriculture and its integrated ties with industrial production, social welfare services for the rural population, and the utilization of recreational resources. The basic possible directions for the development of the economic base of small and mid-size cities (share in the total number of small and mid-size cities, respectively, of the RSFSR at the beginning of 1982) are reflected in Table 3.

Seen as important and essential general conditions for the development of the small and mid-size cities of the RSFSR are the formation there of an urban environment (or its elements depending upon general state possibilities) and the establishment and qualitative improvement of the existing transportation network as well as means of mass communication for ties with the associated territories and access to the unified networks of the country and republic.

Questions of social development and the formation of an urban environment, in combination with problems in the establishment of places for the application of labor, are most acute for approximately 550 small cities that have been

small throughout the course of decades or centuries, with a low level of development of the urban environment. Despite the fact that in a number of these cities individual production projects have been constructed during the last decade, the insignificant scale of the accompanying nonproductive construction (which by no means always took place) could not substantially change the situation that has come about in the social development of the cities in this category.

Table 2.

Development Conditions of the City	Share of Cities With the Indicated Development Conditions in the Total Number of Small and Mid-Size Cities, Respectively, of the RSFSR, in Percent*	
	Small Cities	Mid-Size Cities
Located more than 20 km from passenger railroad stations . . . . .	22.2	10.2
Absence of external highways with a hard surface . . .	10.5	2.9
Presence of sea and river ports, piers . . . . .	23.3	29.2
Location in the Far North and in localities equated with the regions of the Far North . . . . .	9.0	6.6
Location in zones of the intensive influence of large, very large and the largest cities . . . . .	27.8	41.6
Inclusion in the other groups of territorially related communities . . . . .	13.3	21.9
Proposed interrayon centers of intercommunity social and cultural services . . . . .	16.9	45.3
Rayon centers . . . . .	74.4	70.1
Presence of favorable and relatively favorable conditions for production construction . . . . .	38.6	24.1
Presence of favorable conditions for the development of recreational functions . . . . .	31.3	43.1
Existence of prohibitions and limitations in the construction of new and the expansion of existing industrial enterprises and other objects . . . . .	9.4	26.3
Existence of a very definite disproportion in the utilization of the labor of men and women . . . . .	33.3	31.4

\*A large number of the small and mid-size cities show a combination of the indicated conditions.



Table 3. (figures in percent)

Directions of Development of Cities*	Small Cities		Mid-Size Cities	
	Total	In the Influence Zones of Large Cities	Total	In the Influence Zones of Large Cities
Development of organizational-economic and social-cultural functions to serve the associated area . . . . .	76.7	14.3	71.0	15.9
Including as the basic function of the development of the city . . . . .	26.6	4.0	-	-
Development of agroindustrial functions . . . . .	35.6	13.0	48.6	24.6
Location of new production construction projects . . . . .	30.0	5.3	20.3	1.4
With a strengthening of the functions of interrayon centers . . . . .	13.2	0.6	16.7	-
Intensification of production and other types of city-building work . . . . .	37.7	10.5	71.7	27.5
Development of recreational activity as an important function . . . . .	6.0	2.8	8.0	3.0
Development of functions serving the economic complex of a very large city . . . . .	22.6	22.6	31.9	31.9

\*In a number of cities, a combination of the indicated directions of development is possible.

According to the evaluation, for the development of small and mid-size cities in the indicated directions in the coming decades, investments must be increased sharply in comparison with capital expenditures for the development of the examined group of cities during the 9th and 10th five-year plans. These expenditures are intended for the purpose of increasing industrial production in small and mid-size cities, bringing about a substantial increase in the capacities for serving agriculture and for storing fruit and vegetable production and potatoes, and expanding the introduction of institutions for leisure and tourism. It is thereby planned to increase gradually the share of resources directed to the development of the urban economy in the overall volume of capital investments for the development of small and mid-size cities.

The evaluation of the expenditures for the creation of an urban environment favorable for the labor, everyday life and leisure of the population of small and mid-size cities in the RSFSR is based upon the necessity of providing the population of these cities with housing and enterprises for social and cultural services at the level forecast for the country as a whole. The resolution of the problem of the provision of housing means not only its quantitative increase but also the qualitative improvement of housing, the further improvement of the planning of houses and apartments and of the architecture of

housing complexes, their provision with basic amenities, and the elimination of substantial differences in the level of the provision of housing in various regions of the country. For this it appears expedient to redistribute the volume of housing construction between the regions of the European part of the RSFSR (central region and a number of oblasts of the northwest region) that are better supplied with housing and the eastern regions of the republic. With the goal of resolving the housing problem under the conditions of limited state capital investments, it is essential to increase substantially the volume of cooperative and individual building.

To provide for the overall development of small and mid-size cities, it is necessary to increase the share of municipal and social-cultural construction in the structure of nonproductive capital investments.

The preceding is evidence of the fact that the improvement of the economic and social development of small and mid-size cities in the republic requires the establishment of an entire complex of conditions and the consideration of many factors and peculiarities. It should be noted that the problem of the development of small and mid-size cities can be successfully solved only in close connection with the resolution of the tasks in the rationalization of the development and distribution of productive forces and the entire network of populated places.

An essential condition for the resolution of these questions is the improvement of the planned regulation of the development of the entire network of cities. The complex of measures for increasing the level of the planned regulation of urban development must include improvement in the single coordinated system of preplanning documents, plans and complex programs, in the organizational structures of administration, and in the legal and economic means and incentives. These measures need to be directed above all to the search for the optimum combination of sectorial and territorial interests for the realization of national economic tasks. It is essential to create a mechanism that can help in the rational division of the functions among cities of different categories in the area of production and social welfare services and provide for the most efficient use of the resources of each city (labor, physical and natural resources). In the scope of this mechanism, it is important to find approaches to the rational formation of the national economic base of urban settlements, including for various types of small and mid-size cities, and to provide for a system of economic means and incentives that would allow the sectors to compensate for the increased expenditures for construction, reconstruction, the technical reequipping of enterprises, and the creation of an infrastructure in small and mid-size cities.

For the purpose of activating the development of small and mid-size cities, it is expedient, in our opinion, to establish a centralized fund for the development of the smaller cities of the RSFSR, making broader use of the experience of socialist countries.

It is essential that the ministries and departments of the USSR and RSFSR and the local soviets of people's deputies take an active part in the improvement of the economic and social development of the small and mid-size cities of the RSFSR. Ministries and departments whose production objects are located or will

located in small and mid-size cities must participate in the rationalization of the economic base of the cities through the technical reequipment and reconstruction of existing enterprises and the construction of new production systems meeting the contemporary requirements of scientific-technical progress; in improving the efficiency of the utilization of manpower through improvement in the working and living conditions of workers and their family members; in the strengthening of the occupational orientation and choice of young people and the training of personnel; in providing for the overall development of cities; and in the further formation there of the production and social-welfare infrastructure. It is essential for the ASSR councils of ministers as well as the krayispolkoms and oblispolkoms to provide for the carrying out of a purposeful policy in the development of small and mid-size cities and to implement coordination and effective control of the work of ministries and departments in the area of production and nonproductive construction in small and mid-size cities and of limiting the excessive growth of ASSR capitals, kray and oblast centers and large cities. In accordance with the rights and obligations given them, the gorispolkoms must bear the main responsibility for ensuring the overall economic and social development of cities through the rational building up of the territory, control of the work of the ministries and departments in the area of production construction and greater coordination of the work of enterprises and organizations in the establishment of the production and social-welfare infrastructure, and the resolution of the questions of land use, environmental protection, and the utilization of manpower resources.

An important direction in the work of local soviets of people's deputies is the search for and the putting into effect of local resources and possibilities for expanding the economic base of cities, implementing civic improvements there, and organizing the leisure time and the cultural and personal services to the population. It is necessary to implement a combination of measures for the broad inclusion of the urban population in carrying out civic improvements and in maintaining housing and cultural and domestic objects.

The activation of the development of small and mid-size cities will make it possible to attain an all-round and significant social and economic effect going beyond the scope of just the cities of these categories, and it will contribute to the accelerated intensification of public production and to higher levels of satisfaction of the requirements of the inhabitants of the cities and of the rural population gravitating to them.

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## REGIONAL DEVELOPMENT

### PROSPECTS FOR CARPATHIAN REGION DEVELOPMENT REVIEWED

Moscow EKONOMICHESKAYA GAZETA in Russian No 52, Dec 84 p 15

[Article by M. Dolishniy, deputy director of the Institute of Economics of the UkSSR Academy of Sciences, director of the Lvov department of the institute, doctor of economics, professor, and Iv. Batov, special correspondent: "The Carpathian Region: Prospects for Development"]

[Text] The improvement of the territorial and sectorial structure of the economy of the country and the intensification of the comprehensiveness of its development are an important factor in increasing the efficiency of public production. In the research of the scientists of the Lvov department of the UkSSR Academy of Sciences, a prominent place is allotted to work related to the optimization of the economic development of individual regions and the search for ways making the fullest use of local natural resources for the satisfaction of regional and national economic requirements. Among this work we can note the research on the prospects of the development of the Carpathian Region, which is made up of Lvov, Ivano-Frankovsk, Transcarpathian, and Chernovtsy oblasts.

The region is characterized by rich deposits of useful minerals, favorable possibilities for the development of industrial and agricultural production, and natural conditions that are unique for the formation of a health resort zone.

The industrial development exerts an increasingly perceptible and not always favorable influence on the natural environment of the Carpathians. How best to combine the industrialization of the region with the possibilities of using the natural resources for the restoration of the health of people, their rest, the development of sports and tourism?

The healing mountain air and the rich mineral springs attract hundreds of thousands of vacationers and tourists to the Carpathians every year. The region numbers more than 800 springs and chinks of medicinal mineral waters with a total output of about 60,000 cubic meters per 24-hour period. In terms of their chemical composition and medicinal qualities, they are analogous to almost all known types, and some of them are unique. Almost 1.5 million cubic meters of valuable medicinal substance are concentrated in five deposits of medicinal peat mud, and the Borislav ozocerite deposit is the largest one in the USSR. However, for the time being the favorable conditions created by



nature for health resort purposes are clearly not being used sufficiently.

62 sanatoria, 16 boarding houses, 57 sanatoria-dispensaries, 40 tourist institutions, and 130 holiday homes and holiday bases are now operating on the basis of the natural resources of the Carpathians. But this is a drop in the bucket: Research has shown that the demand of the population of our country for rest and medical treatment in the Carpathians annually comes to 5 million persons. The institutions of this region are presently capable of satisfying the demand for sanatorium and health resort treatment to the extent of less than 20 percent.

The collective of the Lvov department of the Institute of Economics of the Academy of Sciences developed a special purpose integrated program "The Rational Utilization and Optimization of the Recreation Potential of the Carpathians". The program provides for measures of protecting the natural environment, outlines scientifically substantiated principles and paths for the efficient development of sanatorium and health resort treatment, rest and tourism.

In the future, resort services will become one of the leading directions in the specialization of the region. According to calculations, an additional 15 specialized sanatoria with 8,500 beds, 30 boarding houses, and 28 holiday homes can be accommodated here. The realization of one of the variants of the program will make it possible to accept up to 3 million persons in the Carpathians annually. From the increase of the capacity of the sanatoria and boarding houses alone, an economic effect in the amount of 520 million rubles can be obtained. Questions of expanding the scales of the reconstruction of existing and the construction of new sanatoria and holiday homes, boarding houses and tourist bases are coordinated in the program with questions of the development of the construction industry and transportation services.

The orientation toward the recreational development of the Carpathians makes special demands on the quality of the environment. It is expedient to envisage the development of industrial and agricultural production in the region with the accelerated solution of environmental protection tasks. Virtually necessary, it seems, is the establishment, within the territory of the region, of conditions for special nature management, guaranteeing the comprehensive solution of the questions of the development of production and the tasks of the full preservation of valuable natural objects.

The comprehensive special purpose program for the rational use of the natural resources of the Carpathians without a doubt must become an integral part of the national economic plans of the development of this unique territory in the 12th Five-Year-Plan and in the more long-term prospect.

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## REGIONAL DEVELOPMENT

### DEVELOPMENT OF UPPER LENA REGION PLANNED

Moscow EKONOMICHESKAYA GAZETA in Russian No 4, Jan 85 p 12

[Article by N. Singur, section chief of the USSR Gosplan: "On the Riches of the Upper Lena"]

[Text] The opening of working through traffic for trains along the entire route of the Baykal-Amur Trunkline in October 1984 marked not only the completion of an important stage of the largest transportation construction project, but also the beginning of the active economic development of the vast territories adjacent to the new railway. In the BAM [Baykal-Amur Trunkline] zone, which constitutes 1.5 million square kilometers, 11 territorial production complexes (TPK) and industrial centers will be formed in the future, each of which will specialize in the production of certain types of products that are of great national economic significance and will fulfill certain economic functions in the development of the productive forces of Siberia and the Far East.

Under the heading "The Territorial Production Complexes of BAM", [our] weekly will tell about every one of them. The first publication is devoted to the Upper Lena TPK.

The Upper Lena Territorial Production Complex includes the Ust'-Kutskiy, Kazachinsko-Lenskiy, Kirenskiy, and Zhigalovskiy rayons of Irkutsk Oblast. The introduction of the Western Section of the Baykal-Amur Trunkline in 1981 is a strong factor in the acceleration of its development.

The Scientific Council of the USSR Academy of Sciences for Problems of the BAM has formulated the following basic tasks before the future TPK's:

--The development of the timber resources located in the Lena basin and its right tributary, the Kirenga, and the creation of comprehensive and thorough chemical and mechanical treatment of several timber industry complexes for them.

--the acceleration of the prospecting for deposits of hydrocarbon raw material, potassium salts, polymetallic ores, coal, iron ores and other useful minerals,

for the purpose of determining the possibilities, time periods and scales of their development and processing both on the territory of the TPK and beyond its confines;

--the provision of an increasing volume of freight transportation on the Lena River to satisfy the requirements of the economy of Yakutiya and a number of rayons of Irkutsk and Magadan oblasts.

#### The Green Sea of the Taiga

The solution of the first task was conditioned by the presence of high-quality timber tracts in the Western Section of the BAM Zone, in Irkutsk Oblast. Here the largest, so-called liquid reserve of wood (191 cubic meters of timber per hectare of operating area) is concentrated. Irkutsk Oblast contains one-third of the total timber of the BAM zone suitable for industrial procurement. Moreover, the most valuable species predominate--pine trees (about 30 percent), fir trees (20 percent), Siberian larches (about 30 percent), as well as occasional cedars and birches.

Here 15 timber industry enterprises are already in operation. The further development of the timber and timber processing industry in the Upper Lena TPK, which has large reserves and better quality characteristics of forest plantations, is related to the construction of large timber industry complexes, which secure the rational utilization of timber raw material and timber restoration. The production of highly-efficient transportable products here makes it possible to reduce the expenditures for the transportation of round timber to the basic consumption regions--the European-Urals zone, Kazakhstan, and Central Asia.

The studies carried out by the scientific research and planning organizations of the USSR Ministry of the Timber, Pulp and Paper, and Wood Processing Industry in regard to the program for the economic development of the BAM zone show the expediency of the creation, in the Ust'-Kutskiy timber industry region, the Tirskiy Timber Industry Enterprise with a capacity of 1.5 million cubic meters of timber procurements a year with the production of ties and technological chips and the Tirskiy Saw-Mill and Timber Processing Combine for the output of 400,000 cubic meters of saw-timber and 150,000 cubic meters of technological chips a year. Plans also call for the construction of the Tayurskiy Timber Industry Enterprise with a capacity of 1 million cubic meters of timber procurements and the Tayurskiy Saw-Mill and Timber Processing Combine for the production of 470,000 cubic meters of saw-timber and 210,000 cubic meters of technological chips a year.

The organization of a timber industry complex is also being proposed in the Kirenskiy region of the Upper Lena TPK. Here up to 5 million cubic meters of timber a year can be procured and its comprehensive processing be carried out, with the receipt of high-quality saw-timber, cellulose, technological chips, and large-format coniferous plywood.

At the present time, the construction of the Kazachinsko-Lenskiy Timber Industry Enterprise, with a capacity of 500,000 cubic meters of timber cuttings,

173,000 cubic meters of saw-timber, and 77,000 cubic meters of technological chips, is being carried out.

### A Treasure of Minerals

An important direction of the formation and development of the Upper Lena TPK is the utilization of mining-chemical and mining raw material in the future. In the north of Irkutsk Oblast, the Nepskiy Basin of high-quality potassium salt is located, with total predicted reserves of 70 billion tons. High-capacity deposits are found at a depth of only 600-900 meters.

It is difficult to exaggerate the significance of this deposit. You see, for the time being Siberia and the Far East are using potassium fertilizers that are brought here from the European part of the country in limited quantity. The development of the Nepskiy Basin will make it possible to organize the production of fertilizers, which supplies not only the requirements of the farms of Siberia and Far East, but also delivery for export.

In 1985, the geologists must complete the preliminary prospecting of the Pri-dorozhnyy Deposit of the Nepskiy Basin of potassium salts and, if the results are positive, conduct a detailed investigation of it during 1986-1990 for the construction of a mining and concentration combine.

In the Ust'-Kutskiy region of the Upper Lena TPK, there are also practically inexhaustible reserves of rock (table) salt in deposits that are not very deep (650-800 meters). Besides the food industry and deliveries for export, this raw material can be used to obtain chlorine, which will be consumed by the cellulose and paper combines.

A number of deposits of oil and gas have been brought to light (the Markevskoye, Yaroktinskoye, Ayanskoye, and others), which are related to the Nepskiy Arch. The oil is distinguished by high quality, a high content of light fractions and valuable oils, and practically does not contain any sulphur. The make-up of the natural gas contains helium, which significantly increases the value of the deposits. The utilization of the hydrocarbon raw material of the Nepskiy Arch will exert enormous influence on the development of the productive forces of significant regions of Eastern Siberia, Yakutiya, and the North East.

### Transportation Links

The development of the natural resources of the Upper Lena TPK is, to a significant degree, connected with the development of the production infrastructure and, above all, transportation. In 1985 it is planned to complete the construction of the fourth phase of the port of Osetrovo in Ust'-Kut, bringing the total capacity for the processing of ship loads up to 2.7 million tons. The subsequent increase of the warehouse areas of the port will make it possible to bring the processing of ship loads up to 4-4.5 million tons a year. New possibilities for navigation are being opened up by the projected river-bed-leveiling work in the Lena River in the Osetrovo-Kirensk section, where guaranteed depths of no less than 2.2 meters will be secured.



In our view, it would be expedient to examine the question of the construction of a railway line connecting the deposits of the Upper Lena TPK with the BAM.

#### Problems of the Complex

Quite a number of difficulties arise in the process of the formation of the Upper Lena TPK, especially in the building of cities and settlements. The basic work that has been completed in this direction by the State Institute for the Planning of Cities (Moscow) goes back to the beginning of the 1970's and has already become obsolete. It seems that the scales and the significance of the TPK deserve the development of a special purpose comprehensive program of its formation and development, on the basis of which the annual and five-year plans would be composed that are approved in the USSR Gosplan.

For the time being there are also no general plans for settlements. The station settlements now present a group of settlements of various enterprises and differ from one another in the level of equipment with services and utilities and conveniences. In Ul'kan, for example, there are 7 such settlements.

The expenditures of the customers ordering housing and municipal facilities are different in the settlements calculated per inhabitant: From 2,500 to 6,600 and even 10,000 rubles. There would not be such diversity if the funds would be in the hands of a single customer.

For the Upper Lena TPK, the outstripping development of the production base of construction is a serious problem. However, up to now no general contractor has been determined for the complex. These questions, it seems, will find their solution in the USSR State Committee for Construction Affairs and the State Committee for Civil Construction and Architecture.

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REGIONAL DEVELOPMENT

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PREREQUISITES FOR TPK FORMATION IN KAZAKHSTAN DETAILED

Alma-Ata VESTNIK AKADEMII NAUK KAZAKHSKOY SSR in Russian No 12, Dec 84  
pp 24-32

[Article by O. I. Yegrov, candidate of economic science: "The Prerequisites for the Formation of Territorial-production Complexes in Kazakhstan"]

[Text] Implementation of the new, large-scale programs aimed at further development of the republic's production forces is giving rise to the need to solve in the years immediately ahead tasks relating to technical, economic and social problems. On the basis of work done on long-term, goal-oriented programs, it is proposed to develop various kinds of minerals, bring additional land resources into economic use, and create new enterprises and expand existing ones. Only under these conditions is it possible to achieve the desired results in the most efficient and rational disposition of production forces.

Consequently, at the present stage special significance attaches to the introduction of new forms for the spatial organization of economic facilities and the planning and management of various regions; and this already requires purposefulness in evaluating the prerequisites for the development of territorial-production complexes [TPK]. This is dictated primarily by the fact that during the planning stage for the development of national economic sectors a decisive role is played by substantiation of the scales of demand for individual kinds of resources and their distribution among the main consumers. It is exactly this factor that exerts a significant influence on the scales on which natural resources are developed, the degree of intensity in the development of individual mineral deposits, and the overall size of capital investments allocated to handle regional and interregional programs for the development of production forces.

In order to substantiate opportunities for forming TPK's let us proceed from the level of economic development in individual regions of the republic and analyze the present status of production in Kustanay, Turgay, Aktyubinsk, Kzyl-Orda and Chimkent oblasts. Each of them is today characterized by the availability of a certain potential, including a given degree of development in the national economic sectors and existing capacities in the extraction industries, whose production program is in some cases lower than actual opportunities allow. Moreover, on the territory of some of these oblasts major mineral deposits have been discovered, which up to now for a number of

reasons have not been worked. The chief of these reasons is lack of the necessary water supplies available from local sources and, as a consequence of this, the irrationality of their development and subsequent utilization in other sectors of the national economy. In confirmation of this conclusion, we might cite the despoils of power-generating coal in the Turgay basin, the rock phosphate at the Chilisaysk deposit, the oil in the subsalt sediments at deposits in Aktyubinsk Oblast, and a number of deposits of ferrous and nonferrous metals. For some of them development requires large one-time investments, for others, major expenditures to further develop production, and for yet others, creation of the prerequisites for subsequent efficient utilization.

The creation and further development of territorial-production complexes are associated precisely with the realization of tasks such as the intensive and large-scale opening up of resources, the construction of new enterprises and building up the capacities at existing production facilities, and the updating expansion and reconstruction of functioning economic elements that are of great importance in the all-union division of labor.

Thus, in this specific instance it is possible to note the unity of the tasks and aims facing, on the one hand, the region under construction (the zone affected by the transfer canal), and on the other, the formation and development of territorial-production complexes within this zone. That these tasks and aims coincide is, in our opinion, the argument that could be decisive in studying the variants for the development of production forces. Given the limited parameters (financial, material and labor resources) the task will be to find the optimum variant that will be in line with obtaining the best economic effect in the given circumstances.

Prospects for the creation of TPK's do not exist in all the territorial formations of the republic located within the area affected by the transfer canal. This is connected primarily with the differences that exist in the prevailing structure of the economy. Whereas in some oblasts development of leading industrial sectors are characterized by the only middling status of light and food industry sectors, metalworking and machine building, and production of construction materials.

Consequently, analysis of the economic potential already established in individual administrative-territorial formations, and substantiation of possible directions in the development of their economies provide extensive information for making judgements about the prerequisites for and advisability of developing TPK's in the region. Proceeding from the data available it can be stated with confidence that all complexes formed there will be based on the development of mineral and raw material resources, namely the increased recovery of fuel and energy resources and raw materials for the chemical industry and ferrous and nonferrous metallurgy. Specialization of the TPK's in this direction will make it possible to considerably expand the energy capacities, and this will positively impact the entire process of economic transformation.

In order to substantiate the opportunities for and advisability of creating TPK's in the zone affected by the transfer canal, let us consider the characteristics of the economic potential established in the oblasts located within this zone. In terms of size of territory and size of population the oblasts differ one from another. Comparing these indicators enables us to judge the degree to which they have been developed, the availability of manpower, and the prospects for further development.

It can be seen from the figures in Table 1 that Kustanay Oblast will have the most developed economy since, while possessing the least territory, its population is the largest in the republic. It can also be seen from the indicator characterizing population density: for Kustanay Oblast 8.33 per square kilometer [as published. But see Table 1--ed] (the figure for the Kazakh SSR is 5.47), for Turgay, Kzyl-Orda and Aktyubinsk oblasts somewhere above 2 per square kilometers, and for Dzhezkazgan Oblast only 1.45 per square kilometer.

Table 1. Area and Population of Oblasts Located Within the Zone Affected by the Transfer Canal (as of 1 January 1981).\*

Oblast	Population Density persons per square kilometer)	Area		Population	
		Total (thousands sq. km)	As percent of Kazakh SSR	Total (1,000's)	As per- cent of Kazakh SSR
Aktyubinsk	2.14	298.7	11.0	640	4.3
Dzhezkazgan	1.45	313.4	11.5	453	3.0
Kzyl-Orda	2.52	228.1	8.4	574	3.9
Turgay	8.39	114.5	4.2	950	6.4
Kustanay	2.46	111.9	4.1	276	1.9

\* See "narodnoye khozyaystvo Kazakhstana v 1980" [The National Economy of Kazakhstan 1980], Alam-Ata, 1981, pp 5-6

By comparing the level of indicators that provide a general assessment of economic development and the development of individual administrative-territorial formations it is possible to distinguish from among them those best suited for the creation of TPK's from the standpoint of conditions that to a large degree will help in their planned formation.

Kustanay Oblast. The main sector specializations here are mining, machine building, the food industry and agriculture. Considerable reserves of iron ore are concentrated in the oblast at the Sokolovsko-Sarbaysk, Kushmurunsk, Lisokovsk and Ayatsk deposits, making up 12.6 percent of the national total; and large reserves of bauxites are located mainly at the Krasnoktyabrsk and Belinsk deposits. Deposits of lignite, fuel shales, refractory clays, and construction sand have been discovered on the territory of the oblast.



The food industry is represented by a number of enterprises that produce whole-milk products, butter, meat and canned goods, and it satisfies the needs of the population living both within the oblast and beyond.

Agricultural production has been much developed. As of 1 January 1981 the total area of land being farmed was 5,914,300 hectares. In 1980 the gross harvest reached \$1,042.8 million, including R596.7 million in crop farming and R446.1 million in livestock farming.\*

A number of enterprises also operate within the oblast, engaged in metalworking and producing consumer goods and construction materials and structures.

Because of the intended shifts in the development of the coal, chemical, light and food industries and ferrous and nonferrous metallurgy, within the oblast a number of sectors of material production will inevitably be formed, designed to utilize output or by-products from the leading sectors in the region, and also to satisfy the industrial, construction and municipal needs of enterprises and their corresponding populated points.

Turgay Oblast. The mining industry and agriculture are the chief sectors of specialization. The oblast contains the Turgay lignite basin, which occupies a special place in the republic's long-term energy balance because of the large reserves of raw materials and their favorable location close to the industrial enterprises of Kazakhstan and the Urals. More than 20 lignite deposits and coal manifestations have been surveyed in the basin. The largest and most promising for priority development are the Kushmuransk, Priozernoye, Orlovskoye, and Eginsayskoye deposits. Together with the local power stations, the energy enterprises of the Uralsk economic region could be the consumers of fuel from the first three named.

Of the other kinds of minerals deposited in the oblast, note should be made of the bauxites and various kinds of materials suitable for use in the construction industry.

Agriculture in the oblast is represented by crop growing and livestock farming. The total area in farming use is 2,710,800 hectares. In 1980 gross output reached R320.8 million, including R176.8 million for crops and R144.0 million for livestock farming. The total grain harvest was 1,954,600 tons.

The light and food industries have been developed in Turgay Oblast and there are a number of machine building and metalworking enterprises, and a construction and construction materials industry.

Aktyubinsk Oblast. The main sectors of specialization are mining, ferrous metallurgy and agriculture. A number of oil fields are located in the oblast and oil recovery there has already been going on for many decades. This region is regarded as promising from the viewpoint of prerequisites for building up oil recovery by industrial working of productive horizons in the subsalt sediments. The presence of oil and gas reserves in these geological structures

\* "National Economy of Kazakhstan 1980." pp 72-73

has been confirmed from the results of deep prospecting drilling, when the first oil from the subsalt sediments was recovered from a depth of 4,500-5,500 meters. Because of this a start has been made in the oblast to form large surveying and oil-recovery subdivisions, and the "Aktyubinskneft" Production Association has been organized; its main task is to speed up preparation of structures for industrial operations.

The chromium compound, ferroalloy and certain other plants now in operation use minerals within the oblast as their raw materials. Industry is developing the deposits of silicate-nickel ores (the Kempirsaysk group of deposits). The Podgornensk sulfur deposit with reserves of about 5 million tons has been discovered in the Aktyubinsk Urals region. Potash salts surveyed at the Zhilyansk deposit are enabling the production of polyhalite fertilizers to be organized.

The Aktyubinsk rock phosphate basin includes 15 deposits. Reserves of industrial-category  $P_2O_5$  total 900 million tons. The presence of major surveyed and predicted reserves, their easy accessibility, the open-cast method of working them with a low coefficient of overburden, and the proximity of the railroad all make it possible to regard the Aktyubinsk basin as a major base for the production of phosphate fertilizers. On the basis of surveyed reserves at the Chilisaysk deposit, during the 11th Five-Year Plan the first stage of the Chilisaysk Mining-and-Chemical Combine will be commissioned; its capacity will subsequently be steadily increased.

Agricultural production in the oblast has been developed on considerable scales. In 1980 the sector's gross output was R412.5 million, including R150.2 for crop growing and R262.3 million for livestock farming.\*

In addition to the sectors listed above, material production in the oblast is also represented by enterprises that process agricultural produce and manufacture consumer goods, and also by a small number of metalworking and machine building plants and construction industry enterprises.

Kzyl-Orda Oblast. Industry and agriculture was developed in this oblast proceeding from the prerequisites typical of this region. The absence of major mineral deposits resulted in the construction of enterprises of machine-build-profile, and light and food industry enterprises. No provisions exist for the long-term construction of projects in the oblast that could become a base for the development of sector specialization.

In agriculture the main cultivated crop is rice; the oblast stands in first place in the republic for the production of this crop.

The aspects considered, associated with the present status of and development prospects for industrial and agricultural production in the oblasts located within the zone affected by the transfer canal make it possible to draw certain conclusions about the economic potential that they possess. In addition, the possibility of organizing TPK's in any given region is obvious.

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\* op. cit. pp 72-73.

Analysis of the indicators for the development of industrial production in the oblasts examined indicates increased economic potential in all the main sectors during the period 1965-1980. On this basis it becomes possible to distinguish discrete groupings of sectors of specialized production, and production whose main functions are to provide various kinds of services for enterprises in the former group.

The best characterization of the degree of production development can be provided by the indicators for gross output, numerical strength of industrial production personnel, and total volume of fixed production capital (see Table 2 below).

In terms of gross output, Aktyubinsk, Kustanay and Chimkent oblasts are largest. The structures of their industrial development differ one from another by the degree to which sectors depending on the raw materials base at each one's disposal have been formed. In Aktyubinsk Oblast the sectors of specialization now include ferrous metallurgy, the chemical industry, machine building, and the light and food industries; in Kustanay Oblast they are ferrous metallurgy, machine building and the timber-processing, light and food industries. Chimkent Oblast is typified by the development of non-ferrous metallurgy, the chemical and petrochemical sectors, machine building, and the light and food industries; and Kzyk-Orda and Turgay oblasts only by individual ones of the sectors named.

Similar conclusions are also reached from an analysis of changes in the numerical strength of workers and the size of fixed production capital at the sector and territorial levels.

Analysis of materials relating to determination of the scope of concentration of industrial production within the republic's TPK's shows that various groups of territorial-sector formations can be distinguished, from small to very large. Taking as a baseline the level reached in characteristic indicators such as volume of gross output, size of fixed production capital and numbers of industrial personnel, the TPK's can, with some degree of arbitrariness, be classified as follows: 1) small: up to R300 million, up to 20,000 people, up to R400,000 respectively [as published--ed]; 2) medium: R300-500 million, 20,000 to 40,000 and R500-700 million; 3) large: R1,000-1,500 million, 60,000 to 100,000 R800-1,000 million; very large: more than R1,500 million, 100,000 and R1,000 million. This kind of grouping makes it possible to state with confidence that in the oblasts considered, if we are oriented on the three indicators above characterizing the level reached in the concentration of industrial production, to some extent conditions have been created for the formation of the TPK's. And because of the intensive development at the present stage of individual industrial sectors and the prospects for their further growth, which assumes increased output volumes, expansion of the products lists, and the commissioning of enterprises new for the industrial sectors of these regions, Kustanay and Chimkent oblasts can be assigned to the group of very large TPK's. Aktyubinsk Oblast occupies an intermediate place between the medium and large TPK's.

Table 2. Level of Main Indicators for Industry in the Region, 1980 (expressed as percentages)  
(industry = 100%)\*

Industrial Sector	Gross Output					Numerical strength of industrial production personnel					Fixed production capital				
	oblast					oblast					oblast				
	Aktyu- binsk	Vzvl- Orda	Kust- anay	Tur- gay	Chim- kent	Aktyu- binsk	Vzyl- Orda	Kust- anay	Tur- gay	Chim- kent	Aktyu- binsk	Vzyl- Orda	Kust- anay	Tur- gay	Chim- kent
Engineering	2.7	2.6	1.0	1.7	1.1	4.8	7.9	3.6	7.4	4.0	20.3	33.4	13.0	40.5	17.2
Metallurgy	0.6	—	—	—	—	0.8	—	—	—	—	3.7	—	—	—	—
Nonferrous metallurgy	14.4	—	18.7	4.0	0.2	11.5	—	22.0	0.3	0.1	16.6	—	50.0	0.2	0.1
Chemical and petrochemical	0.4	—	0.5	14.2	15.7	0.4	—	0.7	12.7	11.7	0.4	—	1.0	28.5	21.0
Food and other	15.1	0.0	1.7	—	10.6	11.8	0.0	2.5	—	7.7	24.7	0.0	2.3	—	21.6
Construction	24.9	14.1	9.0	22.4	15.0	30.7	25.2	23.2	30.4	28.4	12.0	12.0	6.4	12.7	14.1
Transportation	2.7	10.4	14.3	4.5	2.1	4.0	11.2	3.4	6.1	3.2	1.4	18.9	1.4	1.3	1.3
Construction materials	7.9	9.6	7.6	13.7	9.1	10.2	13.0	17.1	18.2	12.4	10.8	13.9	15.2	8.4	12.8
Other	9.0	9.4	19.8	6.8	27.0	14.8	16.1	15.7	12.2	22.3	1.9	3.1	5.4	1.7	5.1
Total	22.3	53.9	17.4	36.7	19.2	11.0	24.6	9.8	12.7	10.2	6.1	18.7	4.7	6.7	6.8

\* Calculations done on the basis of figures from the Kazakh SSR Central Statistical Administration



The creation of TPK's on any given territory should also be subject to one other essential condition that plays a major role in the entire subsequent process of their development and improvements in the territorial structure of production. This is the question of the ratio between development of specialization sectors and the production and nonproduction infrastructure. For example, in the Pavlodar-Ekibastuz TPK, in 1980 this ratio was 78.5:11.5:10.0; and for the specialization sectors and the sectors servicing industrial production in the Mangyshlak TPK it was 8.5:1. Similar comparisons make it possible to clarify the degree of comprehensiveness in the development of a TPK's economy and to outline priority tasks to improve it in order to raise its functional economic efficiency.

Clarifying the level of development in the structure of an economic complex is of great importance when substantiating the possibility of creating a TPK and determining the conditions for its efficient formation and subsequent production intensification. The figures in Table 3 give an idea of the proportion of specialization sectors, the production infrastructure, and the production called upon to service consumer demand. All this makes it possible to show the ratios that have actually been formed between the specialization sectors and service production facilities.

Table 3. Production Structure of Industry According to Proportion of Gross Output (expressed as percentages)

Structural element	Oblasts				
	Aktyubinsk	Kzyl-Orda	Kustanay	Turgay	Chimkent
Specialization sectors	51.0	53.9	61.2	22.3	64.4
Sectors of the production infrastructure	14.2	36.6	16.8	34.3	12.4
Production servicing consumer demand	34.8	9.5	22.0	43.4	23.2
Ratio of specialization sectors and servicing production	1.04	1.17	1.57	0.28	1.81

The level of comprehensiveness in industry, or the ratio of specialization sectors to servicing production (Table 3) indicates that in Aktyubinsk, Kustanay and Chimkent oblasts the kind of proportions have been established between specialization sectors and servicing production that in first approximation can be considered quite adequate for the normal functioning of the economy.

The system of indicators cited to characterize the level of economic development in the oblasts located within the zone affected by the transfer canal reflects the role of each of them in the total results at the republic level. At the same time it should be noted that during the process of clarifying the TPK's that are most important for the country's national economy it is necessary to pay attention to other conditions (criteria) of priority significance. As a rule these relate to the scales of the natural resources possessed by the

TPK that is created, its place in the territorial division of labor, and the tasks resolved during the process of its formation. Proceeding from these prerequisites it is possible to distinguish the following TPK's whose formation it is advisable to organize within the next 5 to 10 years.

The Aktyubinsk TPK is characterized by a rich raw materials mineral base. The directions of its specialization are determined by the availability of deposits of chromites with a high content of chromium oxide, phosphorites, oil, potassium salts and other kinds of minerals and construction materials. In the specialization sectors, enterprises of all-union importance are operating on the basis of utilization of the raw materials there, namely ferrous and nonferrous metallurgy and the chemical industry. The Aktyubinsk Agricultural Machine-Building Plant is the country's only enterprise specializing in the production of electric shearing equipment. Further development of production forces is proposed through improvements in the sector structure of the TPK, which means the construction and commissioning of new enterprises to mine and enrich the phosphorite ores, recover oil and produce washed wool. The qualitative shifts in the sector structure are taking place thanks to the further development of the industrial processing sectors based on local and imported raw materials. Machine building and metalworking also occupy a leading place. The planned construction of the Aktyubrentgen and Aktyubsel'mash plants to produce one-half of all machine-building output in the TPK will make it possible to sharply increase the production of instruments and means of automation and agricultural machinery and spares for it. All this indicates that the conditions for the forming of a TPK are being created in Aktyubinsk Oblast.

The next TPK that can be created in the future is the Kustanay-Turgay TPK. At the present stage production development characterizes this region as one with a high degree of concentration, a sufficiently broad range of specialization sectors, and good prospects for forming sectors of all-union specialization. From the time that work is started on the working and utilization of the deposits of lignite found on the territory of these oblasts, there will be a real need to form a large fuel-and-energy complex including several coal fields and large capacity GRES's. According to the preliminary figures, the economic effect derived from the organization of transportation and freight operations will be quite great; this is connected primarily with the reductions in transportation costs involved in shipping coal to the enterprises of the south Urals instead of coal from Kuznetsk, Kansk-Achinsk and Ekibastuz. Development of the coal deposits will exert a positive effect on the status of the fuel-and-energy balance both in the republic and the country. Moreover, the favorable locations of the coal deposits and the iron ores of the Lisakovsk deposit will in the future make it possible to construct ferrous metallurgy enterprises on the basis of developments in power engineering. Plans already exist for developing the mineral and raw material resources of the region, and schedules are being drawn up for the commissioning of the first capacities at individual deposits. However, intensified production of minerals and fuel resources is possible only given sufficient water resources. Hence, the problem of diverting flow from the Siberian rivers for this region is of exceptionally great importance. Initially the problem of water supplies can be solved by regulating the flow of the Ishim River and constructing a reservoir in the region of the Yesil urban settlement to hold 3 billion cubic meters of water.

Table 2. Level of Main Indicators for Industry in the Region, 1980 (expressed as percentages)  
(industry = 100%)\*

	Gross Output					Numerical strength of industrial production personnel					Fixed production capital				
	oblast					oblast					oblast				
	Aktyu- binsk	Kzyl- Orda	Kust- anay	Tur- gay	Chim- kent	Aktyu- binsk	Kzyl- Orda	Kust- anay	Tur- gay	Chim- kent	Aktyu- binsk	Kzyl- Orda	Kust- anay	Tur- gay	Chim- kent
Industrial Sector															
Power engineering . . . .	2.7	2.6	1.0	1.7	1.1	4.8	7.9	3.6	7.4	4.0	20.3	33.4	13.6	40.5	17.2
Fuel . . . . .	0.6	—	—	—	—	0.8	—	—	—	—	5.7	—	—	—	—
Ferrous metallurgy . . .	14.4	—	18.7	4.0	0.2	11.5	—	22.0	0.3	0.1	16.6	—	50.0	0.2	0.1
Nonferrous metallurgy . .	0.4	—	0.5	14.2	15.7	0.4	—	0.7	12.7	11.7	0.4	—	1.0	28.5	21.0
Chemical and petrochemical	15.1	0.0	1.7	—	10.6	11.8	0.0	2.5	—	7.7	24.7	0.0	2.3	—	21.6
Machine building and															
metallworking	24.9	14.1	9.0	22.4	15.0	30.7	25.2	23.2	30.4	28.4	12.0	12.0	6.4	12.7	14.1
forestry, timber-working	2.7	10.4	14.3	4.3	2.1	4.0	11.2	5.4	6.1	3.2	1.4	18.9	1.4	1.3	1.3
Construction materials . .	7.9	9.6	7.6	13.7	9.1	10.2	13.0	17.1	18.2	12.4	10.8	13.9	15.2	8.4	12.8
Light . . . . .	9.0	9.4	19.8	6.8	27.0	14.6	18.1	15.7	12.2	22.3	1.9	3.1	5.4	1.7	5.1
Food . . . . .	22.3	53.9	17.4	36.7	19.2	11.0	24.6	9.8	12.7	10.2	6.1	18.7	4.7	6.7	6.8

\* Calculations done on the basis of figures from the Kazakh SSR Central Statistical Administration

A start has already been made on creating the prerequisites for a Chimkent TPK. With its adequately high economic potential the region is already a developed, multisector complex based on important sectors of all-union specialization such as nonferrous metallurgy, petrochemicals, machine building, and the chemical (phosphorus), light and food industries. During the current five-year plan, oil refining capacities will be commissioned, and this is opening up broad prospects for the further development of petrochemical production and improving the structure of the fuel-and-energy balance within both the republic and the country. During this same period the capacities of the resin-and-asbestos combine and the tire-repair plant will be expanded. All this will sharply increase the volume of production from petrochemical enterprises, and this will be largely reflected in the sector structure of the TPK. Increased output from machine building and the light and food industries will create the level necessary to develop production called upon to provide services for the specialized sectors and meet consumer demands. It can now be suggested that creation of the Chimkent TPK is advisable during the course of the 17th Five-Year Plan.

In the long term the economy of Kzyl-Orda Oblast will be expanded through the construction of enterprises for machine building (a plant for rice-cultivating equipment and a plant for land reclamation equipment) and light industry and reconstruction of the Aralsol' Combine.

Thus, in the zone affected by the transfer canal using flow from the Siberian rivers a real possibility exists for creating an Aktyubinsk TPK to include the Aktyubinsk, Khromtay, and Oktyabrskiy industrial centers; a Kustanay-Turgay TPK including the Kustanay, Lisakovsk, Dzhetygara and Turgay industrial centers; and a Chimkent TPK with the Chimkent, Kentay and Turkestan industrial centers. The economic effect from their creation and subsequent development will depend largely on the time frames and costs involved in solving the problems of organizing the management of the multisector economy on each TPK.

The above indicates that changes in the disposition of production forces affect not only the republic's economy but also the economy of the entire country. The emergence of new sectors of all-union and union-republic specialization will entail a number of economic links expressing the need for cooperation, the demand for production output, and the delivery of fuel-and-energy, mineral and water resources.

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## REGIONAL DEVELOPMENT

### GEOGRAPHER EXAMINES DIFFICULTIES OF NORTH AREA DEVELOPMENT

Moscow SOVETSKAYA ROSSIYA in Russian 13 Feb 85 p 3

/Article by G. Agranat, doctor of geographic sciences: "We Must Have a Proprietary Attitude Toward Resources"/

/Text/ The role of the north in the USSR national economy is growing. This is a vast storeroom of natural resources. It is interesting to recall Sergey Yesenin's lines written after his trip to America in 1922-1923: "The more I glance at the snow expanse, the more persistently I think. What the hell! Our Siberia is richer than yellow California. With these ore reserves we are not afraid of any world blockade. Just work! Just toil! And the republic will have what everyone needs!"

However, an efficient utilization of resources and the development of the northern territory are not such simple matters. The scientific and technical revolution, rapid development of productive forces and social progress have created new opportunities for a move to remote regions difficult of access. At the same time, the increase in the scale of exploitation of resources and development of the territory complicates the relationships between man and the environment in these regions, where nature is very fragile and vulnerable. Under such conditions we must approach the development of the territory with special care.

The problem of a long-range strategy--determination of ways of a long-term (for 20 to 30 years ahead) development of the north--arises primarily. It cannot be solved unequivocally. One can hardly forget that, essentially, the north is the last major reserve of many types of natural resources. Hence the demand for special care with respect to the resources of the north: No matter how big they may be, on the whole, they are finite and exhaustible.

At the same time, attention must be drawn to the north as a major reserve of free territories. It appears that these types of resources can become scarcer than physical-material resources--minerals, timber and so forth. In fact, these resources, at least most of their types, can have substitutes--natural or artificial. A territory, a geographic space as the place for people's life and activity, cannot be replaced with anything.

The need for free territories arises primarily for ecological reasons. Many regions inhabited for a long time are becoming increasingly overloaded with production and the population. There may be a need for a territorial redistribution of productive forces precisely for reasons of environmental protection.

The role of the north in the maintenance of the earth's biochemical balance is one of the factors determining the many-sided importance of vast poorly developed expanses in the north. It is well known that right now such industrially developed countries as the United States and the FRC are short of their "own" oxygen and "take" it from adjacent territories. The polluted air flowing from these countries is cleaned in other places, primarily, passing over territories that are still comparatively "clean." Such big "clean" spaces become increasingly fewer. Therefore, the role of northern expanses is increasing.

As we see, the ways of development of the north and its role are by no means unambiguous. However, as we have called them, all these are problems of a long-range strategy. For the time being, the north is exploited primarily for the purpose of obtaining mineral raw materials, fuel and power. The following question arises: How to open up the northern territory and what are the most efficient ways of developing the economy and its structure?

The remoteness, lack of inhabitation, difficult access and severity of nature have long made it economically advantageous to limit the development of the north only to the exploitation of deposits of raw materials, which are most valuable and rare, or "ordinary," but have become scarce, the expenditures on the extraction and transportation of which justify the big outlays determined by the specific nature of the north. However, new factors contributing to an expansion of the structure, or as it is sometimes stated, diversification of the economy of newly developed regions have appeared recently. This is primarily an increase in the scale of development of this territory. We will begin from the fact that with the large size of the extractive industry the efficiency of establishment of local service and auxiliary production facilities increases. It is a matter of the production of building materials, metalworking and major repairs.

However, it is more important to proceed further and to discuss the development of sectors of intensive processing of raw materials (metallurgy and petroleum and gas chemistry) and the production of finished articles (machine building).

The new stage in the scientific and technical revolution connected with the introduction of microelectronics and robotics is no less serious a factor contributing to an increase in the degree of overall economic development. New equipment is important, because it increases the efficiency of small and medium-level enterprises and makes the manufacture of a broad list of products at them with a comparatively small volume of output profitable. However, it is even more important to sharply increase labor productivity and to lower the labor intensiveness of production. For newly mastered regions all of this often represents decisive economic factors.

However, the availability of local sources of energy--hydraulic power, petroleum, natural gas and coal--probably is one of the main incentives for an expansion of the structure of the economy in the north.

Many economic scientists have long refused to consider the north a raw material region exclusively. Strictly speaking, the accelerated process of expansion of the economic structure and establishment of production facilities for an intensive processing of raw materials is already noticeable in the north, especially in its southern regions.

However, this tendency still struggles along. Obviously, this is primarily connected with the fact that the development of new regions, especially with such complex conditions of economic development as the north, requires a special economic approach. In fact, the extensive and stable development of the territory requires vast capital investments, the return on which often is not very high. But the country needs, and urgently at that, various raw materials and fuel. Voluntarily or not, funds are invested primarily in the extractive enterprises themselves. At times there is not enough time or money for the buildup of the territory.

Many years' experience has shown that, ultimately, an approach from short-term positions hampers the development of the territory's productive forces and is simply disadvantageous. The well-known lessons of the development of petroleum and gas bearing West Siberia, where the delay in the construction of capital transport routes and in the establishment of the power base and well-planned settlements has had an unfavorable effect on the rates of growth of fuel extraction, are remarkable in this sense. Here is another example. The most difficult navigation conditions in the eastern sector of the Arctic regions in 1983, which extremely complicated freight delivery, have shown with special force that the delay in the long-urgent construction of ground transport arteries in the north-east results in tremendous losses.

In my opinion, in order to avoid such losses and to develop the north, it should have a special standard economic base. The conclusion on the legitimacy of a differentiated approach to the standards of economic effectiveness of capital investments is strengthened to an ever greater extent in Soviet economic science. These standards as applied to long-term goals and projects can be preferential and the period of their recovery is much longer than that envisaged by existing methods.

A broad financial and economic approach and the policy of economic protectionism should extend primarily to infrastructure projects. At the same time, it is not only a matter of preferential standards of effectiveness of capital investments, also bearing in mind preferential technical and economic (calculated) standards. For example, a railroad can be built when the freight turnover visible today is insufficient according to the criteria of inhabited territories. In new regions promising in terms of the wealth of natural resources it is not always possible to see in advance the long-range effect of this road. However, as experience shows, it is, as a rule, bigger than forecast.

If we take up today's formal, strictly bookkeeping positions, possibly, in some cases a certain increase in capital investments and current expenditures will be needed. However, this is the logic of things: It is impossible to approach major scientific-technical and national economic undertakings, with which, along with the conquest of space and utilization of the ocean, the development of the north should be classified, with ordinary value criteria. This, probably, is the chief thing: As a rule, new regions and major projects under construction there need economic protectionism and financial and economic "crutches" only at the initial stages of development.

Of course, everything that has been said is not an appeal to develop a diversified economy in all the regions of the north. The time has come to think about the advisability of a bolder, although very cautious, approach to an extensive and stable development of individual regions of the northern zone, where the appropriate conditions are ripe for this. If we think from broad and long-term positions, the path to such development is the path to the intensification of new regions, which for the time being are developed extensively and, on the whole, one-sidedly.

And another thing. In order to determine the national economic and social-economic advisability of such an approach, special methods of substantiation envisaging a multilateral "qualitative" expert analysis processed by means of computer equipment are needed. In science it is known that problems of strategy of long-term development cannot be solved by a traditional calculation proceeding from today's criteria and standards.

It seems to me that I have touched upon the main problem of economic development of our country's northern regions. There are also other problems of development of these regions, which need an additional theoretical elaboration. For example, it is not easy at all to select the most efficient systems and forms of settlement. It is expensive and technically complex to establish comparatively small, but well-planned, settlements near mines, petroleum and gas fields and timber extracting stations. However, we must have a very cautious attitude toward the watch type of settlement. This method of developing the territory can hardly serve as the basis for the settlement of northern regions, especially if we take into consideration the multiplane opportunities and broad prospects of the north.

The exceptional vulnerability of the nature of the north and its capacity for self-restoration, which is much lower than in temperate latitudes, make it necessary to very cautiously approach the sizes of enterprises under construction and their territorial concentration. Northern nature may not be able to withstand large concentrations of production facilities and big cities. Thought will have to be given to their decentralization. It is to be hoped that the Ukase of the Presidium of the USSR Supreme Soviet on the intensification of the protection of nature in the north adopted at the end of November 1984 will make it possible to solve all these problems.

It seems that the north is the "proving ground," where broad opportunities for testing new ways of improving the economic mechanism, forms of managing the planning of the development of productive forces and methods of evaluation of social and economic decisions are provided. All this meets the tasks set in the decisions of the latest plenums of the CPSU Central Committee and Comrade K. U. Chernenko's directives: "In our economic affairs there should be no place for narrow practicality confined to current routine affairs and afraid of big ideas and goals."

Probably, it can be stated that the north can be a kind of experiment in the area of methods of management similar to those now implemented in our country.

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## REGIONAL DEVELOPMENT

### PAVLENKO'S BOOK ON REGIONAL PLANNING REVIEWED

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 11, Nov 84 pp 122-123

[Review by N. Zenchenko of the book "Planirovaniye territorial'nogo razvitiya" (Planning Territorial Development) by V. F. Pavlenko, Moscow, "Ekonomika", 1984, 264 pages]

[Text] This book treats theoretical and practical issues of the territorial aspect of planning which, together with national economic and sectorial planning, is included in the overall planning system.

The methodological basis of the territorial aspect of planning, as is also true of the other aspects, is the theory of planning the USSR national economy, which is based on the political economy of socialism. The first chapter of the monograph is devoted to these questions.

The primary goal of the territorial aspect of planning is optimal territorial development of a country and all the sectors of its national economy. Therefore, the territorial aspect of planning is a broader concept than "horizontal" planning, that is, territorial planning that covers a certain territory. But the territorial aspect of a plan, the author observes (p 6), cannot be represented as the sum of sectorial and territorial plans. This would lead to duplication of them because territorial plans include the primary indicators of the territorial cross-section of sectorial plans.

The second chapter gives a detailed review of the methods of territorial planning in different stages of building socialism. Considerable space is given to resolving these problems during preparation of the first five-year plan and other long-range plans and to shaping the country's system of large economic regions.

The territorial aspect of planning is based on a broad range of preplanning research as well as on the general theory of national economic planning. The third chapter is devoted to the organization of this work. The author reviews the main preplanning documents: the Master Plan for Siting the Productive Forces of the USSR and plans for development and siting productive forces by sectors and subsectors (sectorial plans) and by Union republics and economic regions (territorial plans). He expresses a number of proposals to improve the development of these documents.

A successful solution to the problem of combining sectorial and territorial planning cannot be secured without a real improvement in the development of sectorial plans in territorial cross-section. These questions are considered in chapter four. We know that USSR ministries and departments which engage in sectorial planning for the country as a whole work out the most important indicators for industrial production and capital construction in a breakdown by Union republics and economic regions of the USSR. Thus, when working out the draft 11th Five-Year Plan, USSR ministries and departments made calculations broken down by Union republics and economic regions for volume of commodity industrial output, for 55 types of output from the extracting and other raw material sectors, for 37 types of machine building output, and for 35 types of output from light and food industry.

For capital construction the ministries and departments were to present calculations in a breakdown by Union republics and economic regions for ceilings on state capital investment with identification of capital investment directed to production construction, for introduction of housing, schools, preschool institutions, hospitals, walk-in clinics, and polyclinics, and for development of vocational-technical education (capital investment in and introduction of educational institutions).

Strictly speaking, the author points out, none of the indicators are territorial ones. The main object of planning here remains the sector with the types of output and other indicators typical of it. Therefore, we are speaking here of a territorial breakdown of sectorial plans. Its principal task is optimal development and siting of sectors throughout the territory of the country from a national economic standpoint, in other words, primarily based on the need to raise the efficiency of public production, taking account of the tasks that face the sector within the unified national economy complex. But at the same time, there must be careful consideration of the social consequences of the decisions being made: the interests of the local area.

Preparation of such plans in a territorial cross-section presents considerable difficulties. Suffice it to say that of the more than 60 union and union-republic ministries, 36 are specially engaged in industry; 25 of the 36 are union ministries, and 20 of them engage in machine building. It is natural that many problems arise at the "boundaries" between these sectors; these problems need to be solved, some of them by local management organs.

In this connection we cannot fail to note serious shortcomings in development of the territorial cross-section of sectorial plans. Above all they are the lack of permanent contacts with territorial planning organs; the frequently mechanical ("according to the base figure") distribution of all-Union assignments for production of output with far less than complete consideration of the internal potential and reserves of enterprises, especially in remote areas; poor economic substantiation of proposals on siting new industrial construction; and insufficient attention to questions of insuring the work force for enterprises and creating the conditions necessary for this (social-domestic construction).

Most of these shortcomings have a negative impact on territorial planning and combining it with sectorial planning. We should add to this poor monitoring of fulfillment of plan assignments by Union republics and economic regions and violations by ministries and departments of timetables for development of the territorial breakdown of sectorial plans and submitting materials to republic and local organs.

The book devotes a great deal of attention to the formation of production associations and intersectorial complexes and to siting industrial sectors with due regard for optimal use of energy, water, labor, land, and raw material resources and the transportation factor. The need to improve the normative methods base for evaluating the various factors that influence siting and to devise a new base for some questions is pointed out (p 147). The development of such a base will make it possible to optimize sectorial and territorial plans for development and siting of productive forces and in many cases find better, more efficient solutions.

The fifth (final) chapter presents the problems of territorial planning at the national economic level. In this the book differs from works published earlier where territorial planning was considered at the oblast, kray, and city levels. The main task of territorial planning on the national scale should be considered insuring optimal development of the economies of the Union republics and economic regions within the unified national economic complex. The specific ways to accomplish this main task are: refining specialization within the system of the national division of labor in combination with economically sound enhancement of economic comprehensiveness (in other words, establishing optimal proportions in economic development); drawing new, economical natural resources into circulation; better use of labor resources and production capacities; rationalizing the siting of productive forces and transportation-economic links, and so on (p 161).

Territorial planning has a very important role in carrying on the economic tasks of CPSU national policy and evening out levels of development and working and living conditions in all the republics and regions. An analysis of the fundamental transformations in the economies of all the republics that have taken place during the years of Soviet power illustrates the successes that have been achieved in economic policy. While industrial production for the USSR as a whole in 1982 was 22 times greater than in 1940, in the republics which used to be the most backward frontier regions the increase has been much greater: 32 times in Belorussia; 33 times in Kazakhstan; 40 times in Kirghizia; 50 times in Armenia; and 57 times in Moldavia (p 162). The sharp differences that used to exist between regions with respect to production of electricity and national income have been eliminated and there have been qualitative changes in agriculture.

The Union republics play an exceptionally important role in territorial development. They compile the five-year and annual plans that contain assignments not only for the subordinate economy but also for enterprises and organizations subordinate to higher-ranking bodies. The Councils of Ministers of the Union and autonomous republics and the executive committees of local Soviets

are charged with compiling and ratifying summary plans for production of local building materials, production of consumer goods, and housing-municipal and cultural-domestic construction.

The author gives a generalized description of such new lines in territorial planning as the formation of territorial production complexes, formation of USSR economic regions, and planning for the largest urban centers -- Moscow and Leningrad.

The concluding part of the monograph presents the issues in improving the territorial aspect of planning and states important, although often also very debatable, considerations on ways to develop it further. The current state of territorial planning is not effective enough. Unfortunately, the author gives only general recommendations on how to eliminate this shortcoming.

The monograph has a clearly practical orientation. It is intended for specialists who work at planning organs and scientific research institutions. In this light, the methodological materials appended to the monograph would seem useful for practical work. V. F. Pavlenko's book can also be used at higher educational institutions (in the economics and geography faculties) as a text on territorial planning.

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## INTRODUCTION OF NEW TECHNOLOGY

### GOSPLAN DEPUTY CHAIRMAN ON TECHNOLOGICAL PROGRESS

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 1 Jan 85 p 2

[Interview with G. Stroganov, deputy chairman of USSR Gosplan: "Technological Progress: The Plan, Incentives, Oversight"]

[Text] [Question] What are the distinct features of the new economic year?

[Answer] This year is not only decisive for the 11th Five-Year Plan but is also the base year for the 12th Five-Year Plan. This means that we must consider each economic phenomenon and each economic decision in terms of its impact on the fulfillment of the year plan as well as its consequences in the next five-year period.

The second important distinction is the clearly defined orientation of all branches of industry--machine building in particular--toward the accelerated intensification of production. The reference points are precisely stated. First, the technical level of enterprises and associations must be raised. Second, all types of resources and scientific-technological potential must be used rationally. Three, product quality must be decisively improved and the production of new generations of machinery and equipment corresponding to the best achievements in science and technology must be accelerated.

[Question] What planned measures have been taken to turn industry and the entire economy more sharply in the direction of intensive development?

[Answer] State plan targets for the growth of production, labor productivity and basic resource utilization are higher than last year. The goal is to make the increased productivity of social labor account for almost the entire increase in national income.

Each branch has developed a complex of economic and organizational measures to promote the large-scale introduction of the latest advances in science and technology, the mechanization and automation of production and improvements in management.

[Question] What are the principal ways and means of effecting the technical retooling of enterprises and associations?

[Answer] The most important way is to speed up the mechanization and automation of the labor all the way from R&D work in scientific research institutes and design bureaus to the operation of machine tools in plant shops. This year, the labor productivity of machine builders, for example, will grow by more than five points and roughly two-thirds of this increase must stem from the higher technical level of production. As a result, machine building will not have to hire an additional 200,000 new workers.

We are planning to replace all obsolete equipment. The rate of renovation of the metalworking equipment park, for example, will be accelerated almost fourfold. The installation of approximately 4000 numerically controlled machine tools, forges and presses is scheduled for the year. This includes almost 400 "machining centers." The year plan calls for the production of more than 2000 flexible production modules and systems. More than 5000 industrial robots and over a thousand new mechanized-flow, conveyor, automatic and semiautomatic lines will be installed.

Particular attention is now devoted to raising the labor productivity of project planners, designers and technologists. More than 300 automated design systems and automated workplaces will be developed and installed for their benefit. I note that many types of equipment incorporate microprocessors. And this is only the beginning of an extremely promising large-scale effort. According to this year's plan, the mechanization and automation of the work of machine builders--the largest contingent of workers in industry--will be raised to 65 percent while the mechanization and automation of loading-unloading, transport and warehouse operations will exceed 56 percent.

I also emphasize the following important circumstance: we must now use every means to achieve the optimal utilization of new equipment. Costly, numerically controlled machine tools are presently being utilized less than 1.5 shifts at many plants. The shift coefficient must be raised to 1.65 by the end of the year. We will then realize a return of 1 ruble 14 kopecks for every ruble's worth of productive fixed capital.

There is one more basic direction of raising the technical level of production: the development and introduction of progressive technological processes based on new types of energy, laser technology, and less energy-intensive, wastefree or low-waste technologies. The hot plastic deformation of metals, economical methods of cutting out and stamping blanks from sheet steel, the production of products with wear-resistant coatings from powdered metal--this is by no means the complete list of new technologies that will be introduced in industry this year. Owing to them, the coefficient of metal utilization will be almost 0.8.

[Question] What is being planned to bolster oversight over the fulfillment of plan targets pertaining to the development, introduction and assimilation of new technology?

[Answer] Measures of a primarily economic nature are being instituted. The system of indicators has been refined and improved. This system oversees practically all work of branch ministries, associations and enterprises relating to the acceleration of scientific and technological progress. In

particular, expenditures and the economic effect of scientific-technological and organizational measures are planned for machine building branches this year (with the exception of basic indicators of development). Targets pertaining to the introduction of nonmetallic construction materials, means of labor mechanization and robotization, and the fabrication of specialized equipment for own needs are planned separately.

Such a system of planning ensures the integrated control of scientific and technological progress and many-sided oversight over the fulfillment of plans. In addition, and I think this is no less important, comparative analysis of the dynamics of indicators will make it possible to identify bottlenecks, to exert a tangible influence on the organization of the work in individual branches and hence to control scientific and technological progress more effectively.

[Question] What new elements are being introduced in the conditions of management?

[Answer] I must say that on the whole the results of the economic experiment at enterprises belonging to the Ministry of Heavy Machine Building and the Ministry of the Electrical Equipment Industry are very encouraging. Plan and contractual discipline has been dramatically strengthened, and participants in the experiment have made appreciable progress in basic effectiveness indicators. Another five machine building ministries have been converted to the new conditions of management. This must be regarded as an additional factor in the successful fulfillment of targets for the year and the intensification of economic work.

Concerning new elements in the experiment, I would like to note the much greater orientation of the conditions of management toward the acceleration of scientific and technological progress than was the case last year. Strictly speaking, a more effective mechanism for introducing new technology will be developed in this stage. Primary emphasis will be placed on the development of a system of economic responsibility for and interest in the development and production of machines, equipment, instruments and technologies that increase labor productivity, raise the output-capital ratio, economize fuel and energy resources, and make our products competitive in foreign markets.

The new technology plan, like the production plan, must become law for ministries and enterprises. Therefore the system of plan indicators and norms in the new stage of the economic experiment orient its participants more precisely toward the most important factor--the all-round acceleration of the development, introduction and assimilation of scientific and technological advances in production.

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GENERAL

MOSCOW CITY OFFICIAL DISCUSSES ENVIRONMENTAL PROTECTION

Moscow TRUD in Russian 20 Jan 85 p 2

/Interview with V. F. Promyslov, member of the CPSU Central Committee, deputy of the USSR Supreme Soviet, chairman of the executive committee of the Moscow City Soviet of People's Deputies, by A. Bolotin, special TRUD correspondent: "Clean City Breathing"; date and place not specified/

/Text/ /Question/ Speaking at the Metropolis-84 conference of mayors of the world's biggest cities held in Paris in the fall, you stressed that Moscow was becoming one of the globe's cleanest capitals. On what is this statement based?

/Answer/ The program for environmental protection and an efficient utilization of natural resources has been steadily and systematically implemented in Moscow in recent years. All this work is done under the direct guidance of the city party organization with the participation of Soviet and public bodies.

/Question/ Vladimir Fedorovich, tell us about the directions in which this program is being realized.

/Answer/ Moscow's ecology is a unique system and an intricate social and natural complex, which successfully combines the urban forming motifs of the country's largest industrial and transport center with picturesque natural landscapes, which have a distinctive and inimitable appearance. Therefore, measures for environmental protection in the capital are integral parts of the plans for its economic and social development and problems of their successful implementation acquire great political importance.

People have always dreamt about living under favorable conditions for work, life and rest. Le Corbusier, world-famous architectural innovator, theoretician of modern architecture and the art of urban development, wrote the following in his celebrated "The Radiant City:" "Be it Oslo, Moscow, Berlin, Paris, Algiers, Port-Said, Rio or Buenos Ayres--only one solution of the problem is possible everywhere, because the problem itself is the same everywhere: To supply human lungs."

In order to give clean air to man's lungs, nature protection measures in Moscow are conducted on a large scale and substantial funds are allocated for them. About 400 million rubles were spent on these purposes during the 10th Five-Year Plan, or three times more than during the years of the preceding five-year plan. A total of 435 million rubles will be spent during the present five-year plan.



On what specifically is this money spent? The set of nature protection measures following from the master plan for Moscow's development envisages moving outside city limits or reconstructing sanitarily harmful industrial enterprises and shops not specialized for the capital, constructing purifying installations and gas and dust collecting units, eliminating small boiler rooms, reconstructing existing and building new parks and boulevards, planning well and planting greenery in coastal zones, cleaning river beds and introducing proper order in city territories.

/Question/ Any large industrial enterprise can be considered to some degree sanitarily harmful. In Moscow there are many industrial giants of machine building, metallurgical and chemical specialization. What is being done to eliminate their harmful effect on the environment?

/Answer/ Many of these enterprises now experience their rebirth. For example, let us take the Moscow Serp i Molot Metallurgical Plant. Thick brown smoke poured out of plant pipes over zastava /gate/ Il'icha, where it is located, as recently as a few years ago. Even the best filters did not save the atmosphere from harmful discharge. Everything has changed now. Open-hearth furnaces have been replaced with electric furnaces and electroslag remelting. Old smoky shops have become a thing of the past. Metallurgists work in bright, spacious buildings with excellent ventilation.

When you travel on shosse /highway/ Entuziastov, pay attention to the modern, new building extending along the main line. White, as though just fallen, snow lies on its roof in winter. This is the new department of the section rolling shop. Its first stage was put into operation last year on the 100th anniversary of Serp i Molot. On the semicontinuous mill installed here the entire rolling process has been fully mechanized and automated.

Serp i Molot is not an exception. Harmful sheepskin production at the Rostokin-skiy Fur Combine and sections with harmful working conditions at the Electric Plant imeni Kuybyshev and a number of other enterprises have been liquidated.

The retooling of production, introduction of improved technological processes, giving up the use of toxic substances and a fuller utilization of waste--this is the set of various measures adopted by the Moscow industry. At the same time, the further intensification of production should ensure a reduction in the number of workers in industry and a gradual increase in the service sphere. An improvement in the environment directly depends on an efficient placement of productive forces on the city territory and on a sound concentration of production and the settlement of residents.

Moving harmful production facilities outside city limits is a big laborious job. It has its difficulties and unsolved problems. A number of ministries, which hamper the rebasing of their plants outside city limits, have been subjected to serious criticism at the session of the Moscow Soviet devoted to problems of environmental protection. People's deputies will continue to persistently strive for the solution of this important social problem.

/Question/ A new expression--"bedroom rayons," that is, residential areas, where the industrial sector is virtually absent--has come into everyday usage among the people of Moscow. Will the city continue to encroach upon the zone of spaces planted with trees and shrubs?

/Answer/ Moscow has accumulated certain experience in working out optimal architectural-planning solutions of projects of residential microregions based on a careful preservation of the elements of nature. To be sure, Muscovites living in the model region of Troparevo and in the microregions of Strogino, Yasenevo, Teplyy Stan, the Olympic Village and Krylatskoye are lucky. Here residential construction is combined with full public services and amenities for the surrounding territory and natural-climatic factors are taken into consideration.

The task is to continue to expand the construction of dwelling houses according to improved, new projects on the basis of the Unified Catalogue, at the same time, ensuring an efficient ratio of construction and spaces planted with trees and shrubs and the maximum consideration of the natural relief. This will make it possible to carefully preserve the natural landscape.

It should be noted that the quality of housing also has a favorable effect on the environment. In the capital 99 percent of the dwelling houses are now provided with a water pipe, a sewer system and hot water supply and gas facilities have been installed in virtually all city housing. Work on the replacement of gas stoves with electric ones is carried out systematically in the residential sector.

/Question/ With the arrival of summer the figure of the fisherman becomes customary at city embankments. There is no doubt that the presence of fish in the Moskva River is a direct evidence of its purity. What water protection measures are envisaged?

/Answer/ The purity of rivers and other open reservoirs in the capital is of vast importance for improving the city environment. In order to make Moscow's water table more transparent, the second block of the largest Novo-Kuryanovskaya Aeration Station and other cleaning installations of a daily capacity of more than 1,600 million cubic meters of sewage have been built and put into operation. A total of 83 circulating water supply systems have also been built, which has increased the reuse of purified water for production purposes 1.5-fold.

City ecology has benefited greatly, when we have sharply reduced the discharge of snow and of the refuse particles contained in it into the water of the Moskva River, Yauza, Setun and others. Seven snow melting centers have been built and put into operation at sewer and runoff collectors during this five-year plan. Another nine such centers and one single-design snow melter, which will be fed by the waste water of TETs /Heat and Electric Power Station/-21, are being built.

Istra, Mozhaysk, Ruza and Ozerninskoye reservoirs surrounding Moscow are natural reservoirs of drinking water. To preserve the ideal purity of these water supply sources is a task of special importance. Taking into consideration that the territories adjoining them are utilized to an ever greater extent for industrial and agricultural needs, we strive to increase the sanitary supervision in oblasts neighboring with Moscow.

The construction of a major new source of water supply for the capital--the Rzhev Hydraulic Power System on the Volga--has now begun. An overall project for the reconstruction of the Canal imeni Moscow is being developed.

/Question/ Of course, under the conditions of such a multimillion city as Moscow a high concentration of the waste of man's activity is inevitable. Nevertheless, mail to the editors indicates that the capital's residents have serious and substantiated complaints about the quality of cleaning of city areas. Household garbage and snow are not always removed promptly...

/Answer/ It is difficult not to agree with this. To be sure, the problem that you discuss does exist. Although the volumes of accumulation of household waste in the capital annually increase by 5 or 6 percent, there are potentials for an improvement in the quality of cleaning of city areas.

It is frequently said that previously, when the yard man's broom or shovel was the "main tool" in street and alley cleaning, the city looked cleaner. I believe that this is not so. Of course, through the fault of individual managers of rayon facilities situations unpleasant for the population often arise, when garbage and snow are not removed promptly. Nevertheless, we should not count on manual labor. Obviously, the future lies in an extensive introduction of mechanization at various harvesting operations and in a significant replenishment of the pool of harvesting machines.

/Question/ Vladimir Fedorovich, it is no secret that motor transport, or more precisely motor vehicle exhaust, gives people the greatest anxiety. What has been planned for reducing the harmful effect of exhaust gas?

/Answer/ Such work is carried out in different directions. First of all, an intensive construction and reconstruction of city roads have been envisaged. During the 12th Five-Year Plan provision is made to complete the construction of a number of sections of the third intracity major beltline and chord highways more than 10 km long and to further reconstruct the capital's existing main routes and the Moscow's beltline. A total of 7 new bridges, 25 underpasses, 25 grade-crossing elimination structures and other projects will be put into operation. This will make it possible to unload central passages, to increase their traffic capacity and thereby to lower the pollution of the atmosphere with exhaust gases.

The creation of transport-free zones, such pedestrian streets as Arbat, Petrovka, Kuznetskiy most /bridge/, 25-go Oktyabrya and Stolesnikov pereulok /lane/, is another way.

However, the greatest effect, of course, is expected from an increase in the pool of machines operating on gas. A significant part of trucks and state passenger cars will be transferred to this type of fuel by 1990. For this it will be necessary to reconstruct and build new motor depots, pools and gas-filling stations.

/Question/ How will the system of green plantings be developed?

/Answer/ In the capital there are 12 suburban parklands, 79 parks, 23 orchards for public use, more than 150 boulevards and 920 squares. Its green decoration occupies 38 percent of the city territory and, on the average, there are about 20 square meters of all types of green plantings per Moscow resident.

Work on the expansion of the green belt continues. We will have to additionally plant a large number of trees and shrubs and to establish new lawns and flower beds.

/Question/ As is well known, the CPSU Central Committee and the USSR Council of Ministers have adopted a decree on additional measures to prevent the pollution of atmospheric air in cities, other settlements and industrial centers. Obviously, this document is of especially great importance for Moscow?

/Answer/ Naturally. This decree continues a number of key, basic documents concerning all aspects of nature protection. First of all, they envisage the fulfillment of the Law on the Protection of Atmospheric Air adopted by the USSR Supreme Soviet in 1980.

The decree especially stresses that there is a need for purposeful and overall work on the part of ministries and departments, whose enterprises are the main sources of pollution of the air basin. On our part we control the norms limiting the discharge of harmful substances into the atmosphere by these enterprises. Reports by state bodies and managers of enterprises, institutions and organizations on problems of an efficient nature use at meetings of permanent commissions of city and rayon soviets and deputy production and territorial groups can give a perceptible effect in the intensification of such control.

The prospects for 1985 are broad and excellent. It will be filled with many outstanding events in the life of the Soviet people. The new year is marked by a period of an active preparation for the 27th CPSU Congress and the celebration of the 40th anniversary of the victory of the Soviet people in the Great Patriotic War and elections to supreme soviets of the Union republics and to local soviets will be held.

In summer Moscow will become a hospitable host of festive processions of the World Youth and Student Festival. A sound of voices in many languages will again be heard on its streets. To make the capital of our great homeland even cleaner, more beautiful and better planned and to preserve the unique beauty of its green necklace and the purity of reservoirs for future generations is the debt of honor of all Moscow organizations and every Muscovite.

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GENERAL

ECONOMIST URGES GREATER USE OF EQUIPMENT DESIGN CONTENTS

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[Article by D. Palterovich, senior scientific staff member of the Institute of Economics, USSR Academy of Sciences and doctor of economic sciences:  
"Competitive Design: Innovation from Conception to Implementation"]

[Text] At first glance this could have been considered a waste of engineering efforts. Why, you could ask, enlist the efforts of three institutes to develop various plans for a standard baking facility? However, it did not turn out that way when the designers presented their work. The "extra" design expenditures reached tens of thousands of rubles, but the difference in effectiveness of the designs produced exceeded that amount many times over.

Just imagine what the situation would have been if only one design, the poorest, had been implemented. The quality of the concept and its implementation would have suffered and great losses would have been incurred.

The described instance of design competition in the food industry, unfortunately, is hardly unique. Usually authorities entrust a site design to one organization, which excludes any possibility of competition among creative collectives for the best solutions. Only in architecture do we see the competitive procedure used quite often and successfully. Unfortunately, I was unable to find any examples in the development of new machinery and production processes where problems were resolved on a competitive basis.

A selection of choices is necessary not only in design evaluation. It is germane in determining the method to satisfy any requirement. A typical example is the selection of the best way to raise production output; is it necessary to build a new enterprise, or will reconstruction work and retooling suffice? Another alternative might be to increase capital investment (although this is always limited) in the mechanization of labor or maybe in upgraded technology.

The resolution of such problems is often not well thought out; it is not as good as it could be. Why not seek solutions on a competitive bases and compare economically based proposals of design institutes and individual specialists?

It is this absence of competition in the selection process that makes it possible for some to reap large bonuses at times for the creation and introduction of nominally new but ineffective technology. Bonuses for such "novelties" can comprise up to six salaries a year, but the design effect of this often remains a fiction. Many economists are now sounding a warning that statistics show a reduction in the yearly number of new types of machinery being developed. This is clearly an unfavorable situation. However, the main consideration is not token novelties but the delivery of real innovation.

Consider, for example, agricultural or construction machinery. In recent years inventories of tractors, excavators, bulldozers and cranes have been updated; there are more powerful and complex models. However, average per unit production improvements are few, and in some cases production quality has gone down. This depends not only on the organization of the utilization of new technology but also on its design, reliability and also on how it is incorporated.

Many combines have been developed for the coal industry. The Gorlovskiy Machine-Building Plant imeni S. M. Kirov alone has produced this type of machine in about 20 different models. However, to date there are almost no combines for thin steep-grade seams. The simple and reliable combines Temp and KT have been taken out of production because they have become "obsolete," and instead of them the new but unreliable and less efficient machine Poisk is being produced.

The competitive selection method should block the introduction of nominally new but inefficient technology.

In order to better satisfy demand the competitive mechanism should not operate arbitrarily but in consonance with previously outlined plans. Associations or enterprises should announce competitions for resolving concrete problems with deadlines provided for my plans for the technical retooling of production.

Economic criteria for the evaluation of innovations must receive more weight. For example, the decision about the delivery of a new machine into production is often made based on the improvement of one or two of its production characteristics, e.g., its speed, load capacity or degree of automation. At the same time the cost of the improvement and the real machine efficiency under actual operational conditions is not taken into account.

Such a limited approach also pervades the evaluation of other design decisions. Decisions are often made on the basis of comparison of only purely technical parameters instead of a complete analysis of the quality and progressive nature of the designs as well as ecological, economic and other design factors. Under present conditions where the role of cost accounting is growing, the time it takes to recover outlays from profits as a result of introducing new technology is taking on more importance. This factor, in my opinion, must become one of the important economic standards.

This proposed method for innovation selection will require a fundamental improvement in economic analysis. If now the function of the economist is essentially to "show" the efficiency of the innovation, the introduction of which has already been predetermined, under the competitive selection system the economist is becoming the "legislator of fashion" in the area of new technology.

Why then is the competitive method not being implemented? Some justify this situation based on the saving of funds that are needed for parallel planning and design. However, this explanation does not withstand criticism, because these expenditures are insignificant in contrast to the cost of the project itself. In addition, in most cases it is not necessary to submit a finished design with working drawings for competition but only basic planning, design and technological determinations.

In many cases additional expenditures for the development of design alternatives will not be necessary. Certainly it often happens that such alternatives are already worked out, but they are rejected because of negativity that some organizations, guarding their monopoly in a given area, show outsiders' proposals.

Such competition is especially important at the present time when conditions are developing for the broader growth of initiative and socialist enterprise, and it is reflected in the large-scale experiment which is now gaining force.

The consistent use of experimental principles and their spread throughout the economy will create conditions for broadening the sphere of competitive selection. This sphere must not be limited only to technical planning and decision making. It is very important to apply the competitive system also to the selection of enterprises which will implement these plans.

Let us say that at the outset the maximum possible price is set for a new item, a price at which the use of the competitive item is acceptably efficient for primary users. Then, design data, demand volumes, maximum price and the date by which the potential producer must signify its agreement to quickly put the item into production are sent to all associations and enterprises able to produce this new item. On the basis of the decision of the competition committee the order is given to the association or enterprise that guarantees the best quality item and the best delivery terms. Only the winner of this competition will be able to count on all the benefits connected with the production of new technology.

This system will provide an effective means for selecting factory-producers only if the enterprises become economically interested, obviously, in the production of a new item. To accomplish this, it will be necessary to more actively remove out-date items from production, to make them unprofitable by reducing prices on them and to provide incentives to workers of those enterprises which receive competitive orders more frequently.

At the same time a broad legal foundation for the competitive system must be set up. The USSR State Committee for Science and Technology and the USSR State Committee for Construction Affairs must, it seems, take a leading role in this. They could, in respect to competitive selection, indicate what kinds of projects and technical problems would require the use of the competitive system and how the system would work.

There is one more condition necessary for the effective operation of a competitive system. More work must be done at enterprises and organizations to develop the potential of technical innovations prepared for introduction; collectives, working in various approaches, should be empowered more often to work out projects independently; and the technical creativity of inventors and innovators should be utilized more widely.

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